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ORIGINAL ARTICLES.

MYOCARDITIS IN INFANCY AND CHILDHOOD.¹

By HENRY KOPLIK, M.D.,
OF NEW YORK.

WERE we to judge of the frequency of myocarditis in infancy and childhood from the space devoted to the consideration of this disease in the pediatric text-books, we should rank it as rare and scarcely worth serious study. Yet all, or most all of our knowledge on the pathology and theory of myocarditis to-day has accumulated from observations upon the infant and child. The pathological anatomy of the condition certainly has received most of its facts from autopsies upon infants and children dying of the infectious diseases. The theoretical experimental work upon the myocardium has received its direction and stimulus from these autopsies. The classical book of Henoch treats of myocarditis in small paragraphs, relative with the infectious diseases; true, in a masterly manner, but yet not so as to impress the student with its ever present importance. From the standpoint of daily practice, it would not be overstatement to say that myocarditis, if not the most trying, is one of the most important conditions met at the bedside of the sick infant and child. It is sometimes the only thing that stands in the way of the recovery of the patient.

In the literature we are first struck with the uniformity with which the various workers in the pathology of myocarditis have established the presence of serious heart-muscle changes in autopsies upon infants or children dying of the infectious diseases. Any autopsy upon diphtheritic, scarlatinal or typhoid material will uniformly show changes serious enough to have caused death. From the classical epoch-making work of Virchow to the convincing proof brought forward by Romberg, Hayem and Leyden, we find a uniformity of result. It would be out of place here to recapitulate changes in the myocardium established by Virchow, Romberg, Leyden and Hesse in the infectious diseases of infancy and childhood. Every well-read physician is familiar with them. It is, however, of the utmost importance to remember that Romberg found these changes to exist only in foci and not to affect the whole myocardium, as we would have the parenchyma of the kidney affected in acute nephritis. In other words, portions of the heart may be quite normal, others degenerated, in a fatal case of myocarditis.

Of greatest interest to the practising physician

are the results of experimental work in the sphere of myocarditis. It has long been a question whether the temperature, the toxins, or the bacteria, individually or combined, were the cause of the myocarditis in the acute infectious diseases. T. W. Talquist, B. Werhofskey, Wm. Schamshin, Welch and Flexner, and J. Mollard and Ch. Regaud have given us very interesting data in this direction. As I have stated, they have been for the most part guided by the results found at autopsy upon infants and children, and have tried to produce similar conditions of fever and toxemia in their experiments on animals. B. Werhofskey has raised the internal temperature of the healthy animal by external means. He eliminated toxemia as much as possible and showed that heart changes, such as parenchymatous degeneration of the muscle cells, are undoubtedly produced by prolonged fever. The changes are not sufficiently marked, however, to account for the advanced myocarditis found in the infectious diseases. He concluded that the myocarditis found in these diseases is only in part due to the fever, and for the most part to toxins. To demonstrate that a toxin alone can cause fatal myocarditis, he has killed animals with abrin toxin. The changes in these cases consisted in marked parenchymatous myocarditis (cloudy swelling and fatty degeneration being very advanced). It would require much more space to go fully into the experiments with diphtheria toxin and its effect upon the parenchyma of the various organs. The leading facts can only be touched upon here.

The works of Welch and Flexner, Mollard and Ch. Regaud are of especial interest in relation to our theme. Mollard and Regaud, experimenting with the toxin of diphtheria, have found that animals injected with this poison not only showed an invariable parenchymatous degeneration in acute forms of intoxication, but sometimes this was the only lesion found after death. The muscular fibers were affected; they lost their striation and showed cloudy swelling. The nuclei and cytoplasm became affected. The vessels also were the seat of marked changes. In subacute poisoning, the interstitial form of myocarditis was added to the above picture. Leucocytosis in the acute toxemia was found in foci. These leucocytes, then, designate the phagocytes of elements of degenerating and disintegrating muscle-cells.

T. W. Talquist attempted to find out whether bacteria (in his experiments, streptococci) could, of their own activity, cause myocarditis. He came to the conclusion that streptococci find a bad culture nidus in the myocardium, and soon lose their activity. They do not proliferate, but die out after a time in the tissues. The toxins produced

¹ Read at the General Meeting of the Academy of Medicine, January 18, 1900.

by them cause parenchymatous changes which in subacute cases may be supplemented by interstitial changes. All changes start from the pericardium or zones immediately adjacent.

Of still greater interest are the experiments of Wm. Schamshin, who examined the nerves and ganglia of the heart, with a view to determining whether the clinical symptoms of myocarditis could be connected with changes in the nerves, rather than in the muscle. He came to the conclusion that the nerves showed no changes whatever; the muscle-cell itself, primarily, was the seat of degeneration, and symptoms must be attributed to the presence of these changes. Making autopsies upon children who died of diphtheria and who had been treated with serum, he found that the late cases, only after the disease had lasted three days, showed parenchymatous changes. This fact is of the greatest significance in view of the modern tendency of the antitoxin treatment of disease.

I have thus sketched in broad outlines the doctrine of myocarditis in the acute infectious disease. Myocarditis is an entity, distinct, always threatening, and sometimes fatal in these conditions. The myocardium is peculiarly susceptible to the action of any toxin, whether it is that of abrin or that of the diphtheria bacillus. The fever plays but a subordinate rôle. This latter fact must impress itself on the mind of the physician; for some of the most toxic and fatal diphtherias or pneumonias run their course with a low fever demanding no therapeutic measure of itself. The symptoms, so far as the heart is concerned, are not due to changes in the nerves or ganglia primarily, but to lesions of the muscle-cell itself.

From a study of the literature we are impressed by the fact of the universal presence of heart changes at autopsy. This forces us to the inevitable conclusion, important to the physician, that myocarditis is more frequent than supposed, and is not only a great factor in the semiology of the infectious diseases, but is not always fatal, as the text-books upon pediatrics would lead us to suppose. In other words, a heart may have been the seat of myocardial changes and still in the end be restored to the normal. The infant or child's heart must be particularly capable of restoration to the normal, if we consider the great number of infections it withstands before the advent of adult life. There may be conclusive experiments in the future which will justify the belief of Zenker, Waldeyer, and Hayem, that the diseased muscle fiber of the heart is capable of regeneration in the same manner as the injured nerve fiber, else we would have the vast number of adult hearts the seat of disease as a result of the repeated toxemias of infancy and childhood.

This brings the writer to the clinical part of myocarditis. We will consider the disease only as it occurs in the acute infectious diseases, and will not touch upon the myocarditis occurring in conditions of diathetic dyscrasias, such as congenital syphilis and tuberculosis. It would be

impossible to formulate, with our present knowledge, any definite semiological table of symptoms which in the infectious diseases could be traced to a latent or marked myocarditis. If this were possible, our work at the bedside would be much more intelligent; we would hear less of sudden fatal issues to diphtheria, pneumonia, or other exhausting diseases. The original disease masks the symptoms referable to the heart. To-day we have a certain definite set of symptoms which supervene after the myocarditis has been well established. They may appear at the outset, as in diphtheria and endocarditis, or in the convalescence, as in diphtheria, typhoid fever, or pneumonia. The symptoms point, as a rule, to some functional weakness of the heart muscle, as evinced by feeble, disordered action of the organ.

One of the most striking effects of the serum therapy in diphtheria has been the uniform assertion of those whose observations are worthy of consideration of the great supporting action of the injections. On the second day after the injection, a child will be found sitting up and playing in bed, while the throat is still covered with membrane. What may this mean? It is that the toxic action of the disease has been arrested not only on the various organs, but upon the muscle fiber of the heart. Hesse, in pre-antitoxin days, proved that sudden death supervening at the outset of this disease from acute myocarditis, was not uncommon. Schamshin, on the other hand, has shown that myocarditis in serum cases is found only after the disease has lasted three days or more. Symptoms of functional cardiac disturbance may appear in the convalescence, not only of diphtheria, but of any severe throat disease of the streptococcus or staphylococcus variety. The following case will illustrate:

A female child, six years of age, had passed through a severe pseudo-membranous throat affection of a streptococcus type. The child was still confined to bed. In the early morning while sitting up to take her breakfast she was suddenly taken with faintness, a chilly feeling, vomiting and great precordial distress. On reaching the bedside I found the external temperature reduced to the touch, the pulse very irregular, flickering, and not rapid. With the application of restoratives the little patient did well, but these attacks of faintness and cardiac irregularity continued for months after the disease had run its course. The child made an eventual recovery to the normal. This was without question a cardiac affection due to the toxic action of the disease on the heart muscle.

I have to-day under constant observation a boy of four years of age. When a baby nine months old he had suffered from a severe and prolonged attack of malarial poisoning. The plasmodium was found at that time in the blood, but only after the disease had lasted some time. The temperature during the first period of the disease reached the maximum of 106.5° F. in the rectum. After prolonged convalescence, dur-

ing which the infant and afterward the child was allowed to be the subject of repeated attacks, we find to-day the following condition: A well-nourished child for his age, he is not over fat. When free from symptoms his color is very good. His pulse has an irregularity not more marked than is common to children. He is subject to attacks of weakness. He becomes pale, his hands feel cool, his heart is very irregular and sometimes his sickness compels him to leave his play and lie down. The mother, who is very intelligent, has observed him during these attacks. His pulse is flickering and very irregular. These attacks will come on even during sleep; a cold perspiration will break out over his face and the extremities are cool; no temperature; no enlargement of the spleen; no blood plasmodium; no cardiac abnormalities except a weakness as apex of the first sound. Quinine not given at these times. The conclusion, in view of the excellent condition of this boy between these syncopal attacks, the absence of cardiac valvular disease, has been, for me, that the prolonged malarial poisoning has left the heart muscle compromised. It may eventually be restored to the normal.

The pneumonias of infancy and childhood furnish their quota of disturbances of heart action, which may point to very serious effects of toxins of the disease upon the heart muscle. Of the primary pneumonias, functional derangement is apt to appear at the time either of the onset, at the appearance of the crepitant r  le or at the time of the crisis or convalescence. I have often seen at the outset of the pneumonia, an infant overwhelmed by the disease. Such infants may be over fat; they bear illness very badly. There are at the outset evidences of poor heart action in a pallor, with slight cyanosis, rapid heart action. It is impossible in such cases to say whether we have a primarily fatty, weakened organ, or distinct changes in the myocardium due to infection, or whether the organism is overwhelmed with the disease. In the beginning of convalescence, however, at the time of the crisis, such a case as the following is apt to cause great uneasiness. The presumption of myocarditic change is very strong. The following case is illustrative:

A boy, eight years of age, suffering from a most severe lobar pneumonia, right lower lobe, with marked cerebral symptoms at the outset. The cerebral symptoms persisting throughout the disease. At the time of the crisis the temperature fell to subnormal; without any previous symptoms, irregularity of pulse set in to a very marked degree, so much so that the pulse was thready and seemed to threaten to stop. There was some precordial uneasiness. The systolic apex-beat was weakened and the second pulmonary sound somewhat intensified; no signs of cardiac dilatation. This boy caused great uneasiness for days, and for a time into the convalescence.

On the other hand, the following case in which an autopsy was made will be of interest: A boy, nine years old, suffering from an acute osteomye-

litis of the tibia, after a week's illness developed quite suddenly a pneumonia of the right lung lower lobe. When seen by me his pulse presented gallop rhythm; his respirations were much accelerated; there was cyanosis, pallor and great precordial uneasiness. The boy looked mortally ill. The heart gave the most interesting signs. At the apex both sounds were very indistinct. The muscular part of the first sound was scarcely appreciable. There was a very slight valvular quality to the second sound. At the pulmonary valve there was slight accentuation of the second sound. A diagnosis of great cardiac weakness was made; possibly heart clot. The autopsy, two days after, in addition to the pneumonia and osteomyelitis showed a somewhat flabby heart; a microscopic examination was not made, although it in all probability would have been found degenerated, arguing from the macroscopic consistency.

The most interesting class of cases and yet those which some would least be willing to admit as belonging to this category of myocarditic changes are the severe cases of pertussis. The writer has shown that in these cases the heart is subjected to great strain. Henock speaks of fatty degeneration of the heart muscle in prolonged and complicated cases of pertussis. Osler speaks of the strain on the heart and its possible etiological factor in producing heart disease later in life. In my own work on heart strain in pertussis I showed distinctly that the cardiac area was increased in many of these cases, although it was impossible to positively prove that dilatation of the ventricles existed. The heart action in all of these cases is weakened and insufficient. There is a constant dyspnea and constant pulse acceleration even between paroxysms, constant drowsiness, edema of the face and extremities, all showing cardiac insufficiency. Auscultation even shows slight blowing murmurs at the apex and weakness of muscular sounds. There are other evidences in these cases of cardiac insufficiency, such as pallor and cyanosis, weakness and disinclination to exertion, such as mounting stairs. The pulse is not only increased, but markedly irregular and dicrotic with sustained tidal waves. The evidences of strain and consequent weakness of the myocardium, and, as Hensch put it, fatty degeneration, are overwhelming. They are the result not only of strain during the paroxysms, but the effect of the toxic influences of the disease itself.

In complicated cases the toxemia is increased by the complicating conditions. A very large class of cases in which the integrity of the heart muscle is seriously compromised are those in which the patient is the victim of endocarditis or pericarditis.

The prognosis of rheumatic cardiac affections is much more favorable in infants and children than in adults. In other words, it is common in infants and children to find murmurs, the result of healed or past endocarditis, giving no symptoms. The heart and

economy do not seem to suffer much from these healed conditions. They are found incidentally to examination for other affections. In acute endocarditis, in the active stages of the disease, most observers have been able to make out a palpable increase in the relative cardiac dullness. This dullness diminishes in the convalescence, and if the disease is cured, the heart areas are found normal. Not so should the heart be the subject of a subacute process or repeated attacks of endocarditis. The dullness will increase very palpably. Added to this will be found other evidences of heart weakness. Such hearts are apt to act very unsatisfactorily upon the supervention of any infectious disease, such as measles or scarlet fever. I have seen such hearts become very insufficient, the swelling of the liver and spleen become more marked. In the convalescence and thereafter attacks of vomiting and faintness supervene, the swelling of the liver is apt to persist and attacks of cardiac angina and precordial distress are frequent. So great is the recuperative power of the heart in children that such cases may even retrograde, the liver diminish in size, the attacks of angina subside, the heart action become quieted; in other words, signs of degenerative effects may disappear. Such a case is now under my observation.

A girl, aged fourteen years, who has been the subject of simple endocarditis since an attack of measles in infancy, and under constant observation. Two years ago she had an attack of scarlet fever. The above signs of cardiac inefficiency appeared and persisted for months, finally to disappear, leaving only the signs of the old endocarditis.

The most trying cases of heart weakness with degeneration of muscle fiber are those of adherent pericardium. In most of the cases the changes in the pericardium are combined with those in the endocardium. The degenerative changes in the muscle fiber of the heart are more serious than in any other form of rheumatic heart disease. There is actual destruction of muscle fiber and its replacement by connective tissue. The following is a case in point. The history of rheumatic endo- and pericarditis extended over two years. The boy, six years old, after repeated attacks of endo- and pericarditis developed an attack in which signs of heart weakness were extreme. The respirations and pulse ran up to an abnormal degree, the pulse and respiration ratio being 2 to 1 for weeks. He died with all signs of progressive cardiac weakness; post-mortem revealed marked interstitial myocarditis starting from the pericardium principally and very marked increase of brown pigment in the interstitial tissue, and also in the spaces between the muscle cells of the myocardium.

Possibility of Diagnosis During Life.—The question which will arise in the minds of most physicians is whether the diagnosis of myocarditis can be made positively during life. The literature shows that the most extensive myocarditis has been found at autopsy, and yet during

life no symptoms referable to the heart were noticed. This fact, and also the fact that the most serious cases of myocarditis first show their presence by the sudden death of the patient in apparent freedom from symptoms, has engendered a pessimistic attitude toward the conditions which we have described. This attitude is harmful. It is not in accord with the advances in our knowledge. If we cannot make a positive diagnosis, we may suspect in a great many cases the presence of myocarditic changes in the face of certain symptoms. If the fatal cases have baffled our methods of recognition, we have a large number left in which certain symptoms of cardiac weakness should put us on our guard.

If, in the course of an infectious disease, we have attacks of faintness, pallor, vomiting, disturbed and very irregular heart action, a persistent distortion of the respiration and pulse ratio as in adherent pericardium, it is certainly significant, especially if these attacks have a tendency to recur. If examination of the heart shows extreme weakness of the apex beat, weakness of the first sound, or disappearance of its muscular quality, greater intensity of the second sound at the apex, with intensification of the second sound at the pulmonic orifice, we certainly in these have danger signals of greatest moment. If, in addition, as in pertussis, we have other signs of cardiac insufficiency, such as a slight systolic blow at the apex, edema of the face and extremities, pallor and cyanosis, disinclination to exertion, constant drowsiness, it would be certainly narrow, in view of our pathological and experimental knowledge, not to entertain the possible existence of serious degenerative changes in the heart muscle.

The daily labor of the physician is at the bedside of the infant and child suffering from the infectious diseases. He may be unconscious of the fact, but the recovery of his patient will in the vast majority of his cases depend on the action and integrity of the heart muscle. His therapeutic methods must not simply reduce temperature, but in reducing temperature they must not compromise the utility of the heart in order that the patient may tide over the dangers of the illness. In all this we must foster the modern tendency of treatment which is to support the strength of the patient. The danger which hovered over patients who formerly were given large doses of depressant drugs can be appreciated, if we believe what has been brought forward in this paper. As to the heart, we should never forget that it is fortunate that even in a degenerated organ we have healthy tissue on which our drugs and methods are supposed to act. We must not exhaust these healthy foci by overwhelming them with harsh measures or large doses of powerful drugs. Foster their strength rather. The areas of degeneration will not be aided by drugs, but must be healed; in time, possibly, there may be regeneration of new tissue. The hope of these cases then lies in well-sustained nutrition, carefully and persistently regulated.

UTERINE FIBROIDS COMPLICATED BY PREGNANCY.¹

BY WILLIS E. FORD, M.D.,
OF UTICA, N. Y.

A FIBROID tumor of the uterus does not necessarily imperil life. Its position, its size, and the rapidity of its growth are factors that must be taken into account when advising as to what treatment, if any, is necessary. Complications that arise from pressure, or from hemorrhage, or from degenerative changes, often demand radical measures. It is usually because of some of the complications arising from the presence of the fibroid that the patient first seeks the advice of a physician. Very large symmetrical fibroids of the intramural variety have been discovered by the physician before they were known to the patient. The position of the fibroid or its relation to the true structure of the womb is of more importance, perhaps, than the size of the tumor. A small fibroid in the top of the womb may remain for years without doing any special harm; whereas, a growth of the same size on the side of the uterus at the base of the broad ligament may interfere with the ureter so as to cause death. Again, the small fibroid embedded in the body of the uterus and projecting into its cavity so that its capsule is ruptured, may cause such troublesome and persistent hemorrhage as to warrant a hysterectomy. A soft myoma may give no pain and yet increase in size so rapidly as to endanger the life of the patient.

Pregnancy is one of the complications, rarer perhaps than others, but it is seen frequently enough to make it an interesting topic for discussion. It is probable that pregnancy takes place more frequently in a fibroid uterus than was formerly supposed to be the case. I am inclined to think that many serious conditions following normal childbirth are due to the presence of small unrecognized fibroids. It is very often the case that no examination of the uterus is made until the time for normal delivery of the child, and a fibroid easily escapes observation unless a most careful examination is made. I am inclined to think that pregnancy occurs less frequently in subserous fibroids than in the intramural class. Of course, a large submucous fibroid, if it is at all extruded into the cavity of the uterus, will naturally prevent conception. Again, a fibroid which involves either lip of the cervix enough to distort the cervical canal will probably prevent conception.

The dangers attending pregnancy where there is an intramural fibroid are overdistention and rupture of the imperfectly developed fibers of the uterus, or the prevention of the normal first stage of labor by the presence of the inelastic fiber tissue at the neck; or, displacement of the uterus so as to distort the natural birth passages; and, lastly, sepsis following infection after delivery. It is impossible to make a rule which shall define the limits of danger and prescribe what operative

procedure shall be followed in the dangerous cases. I venture to relate a few typical cases that have come under my observation which seem to me to illustrate the conditions that may safely pass to normal delivery; and also to illustrate those conditions where surgical interference is necessary.

Case 1.—In 1892 a young woman was sent to me with a fibroid tumor of the intramural variety involving the body of the uterus, chiefly on the right side. The cervix was free. The tumor extended half way to the umbilicus. The woman was well in every way and had no hemorrhages, but wanted to discuss the advisability of an operation. She declined to be operated on and was treated for a time with ergot. In November, 1893, she was married, at the age of thirty-three. She miscarried at the second month in April, 1894. There was no infection following and she was not long sick. In January, 1896, I was called to see her and found her eight months pregnant, the tumor displaced over to the right side and easily distinguished from the sound uterine tissue. The fetus lay very high, the uterine wall was thin, the cervical region was free, although the tumor extended to the umbilicus. The fibroid came to the median line in front and the uterus seemed to have developed laterally to the left side, the fibroid forming the right lateral wall of the uterus. I prepared for a total hysterectomy, informing the family of the great danger, and awaited the time for delivery, which occurred in February. There was not much trouble with the first stage of labor, although it was a breech presentation, and when dilatation was accomplished the feet were brought down and the child was easily delivered. It was alive and healthy. The afterbirth did not follow and finally was found implanted in the right side near the fundus, at the top of the fibroid, as if laid on a shelf made by the projection of the fibroid into the uterine cavity. This was removed with great difficulty, but with as little violence as possible, and with thorough attention to antisepsis. The uterus afterward contracted and the patient made a good getting-up, although for about six months she had occasional bright hemorrhage. This did not amount to enough, however, to call for any special interference but was accompanied with some pain similar to after-pains. At the end of the six months she had a sudden gush of blood with great pain, and extruded a fibroid tumor the size of a coconut. She has since remained well. Menstruation has been regular but scanty. An examination made recently shows the uterus retroverted, but not much enlarged, the cervix tilted up under the pubic arch, and the body of the uterus easily made out. In the posterior right lateral wall are three small subserous fibroids not larger than a walnut seated above the internal os. The woman is in perfect health. This type of case rarely becomes pregnant, I think, and is one in which the danger of pregnancy is not very great. The reliance for safety of delivery was based upon the fact that the lower part of the

¹ Read before the Medical Society of the State of New York, Albany, N. Y., January, 31, 1900.

uterus was free and that none of the cervical tissue was involved. It was, therefore, determined that she could be delivered, and the only remaining danger was sepsis. I fancy, however, that this fortunate outcome is not often seen.

Case II.—I was called in April of 1899 to see a woman who had been sick for eight weeks following a miscarriage. The history showed that this was the first pregnancy in a young woman who, when three months advanced, was thrown from a bicycle while riding and was taken into a neighboring hotel, as she was so ill that she could not be taken home. She miscarried in two or three days. The afterbirth was not easily removed and septic symptoms supervened, continuing for eight weeks, at which time I was called to see her. She was profoundly septic, with a high temperature, with a feeble, thready pulse, and with a foul-smelling discharge which frequent vaginal douches and antiseptics had not improved. I found a tumor in the posterior wall of the uterus the size of a cocoanut, involving part of the posterior wall of the cervix and extending into the uterine cavity above. This mass was sloughing and I advised an immediate hysterectomy, which was declined. As a temporary measure I curetted away large masses of this fibroid and packed the uterus with gauze, hoping to relieve the immediate symptoms and then secure a hysterectomy. The tubes did not seem to be involved, and, indeed, the condition was one of local putrefaction. Any further operation was declined and after a few days the woman died. The trouble in this case seemed to be largely due to the position of the fibroid, which was low down in the body of the uterus, posteriorly, and the capsule of which must necessarily have been ruptured during the process of dilatation previous to delivery, rendering infection almost certain. If she had gone on to full time it is doubtful if she could have been delivered naturally.

Case III.—In August of last year I was consulted by a woman, thirty years old, who said she had a tumor and who seemed very ill. It was found that she had a fibroid the size of one's fist near the left cornu of the uterus, and that the uterus below seemed distended as if pregnant. She denied the possibility of pregnancy and for a month or two it was very hard to be absolutely certain of the condition. At the end of three months, however, there was no doubt and the patient was retained in the hospital for observation. She was really too ill to be at home or to be cared for out of the hospital. The nausea and distress were dreadful and several times the question of inducing an abortion was discussed. The uterus rose very high toward the last of her term, and the distention was so great as to incapacitate her from moving about. No other fibroid mass was to be found in the uterus and it was thought to be safe to wait for a normal delivery. This occurred without any untoward circumstances and with very prompt contraction of the uterus, leaving what seemed to me to be a much smaller fibroid than the woman started with.

Case IV.—A woman, aged twenty-nine years, in her first pregnancy at the fifth month, who had been told that she had a fibroid and that it would not materially interfere with labor, was taken suddenly ill with pain in the abdomen and with some rise of temperature, and I was summoned to a neighboring town to see her. She was so sensitive to touch that an examination had not been thoroughly made by her physician, who was entirely competent and had desired to do so. It was not until I had argued the gravity of this condition for some time that I was permitted even to attempt an examination. The abdomen was very tense and fully distended, and the cervix was found fixed and impacted by a fibroid about the size of one's fist arising laterally from the left anterior wall of the uterus, just opposite the internal os. The whole birth canal was so occupied with this impaction that it would have been impossible to have delivered anything out of the uterus. I tried to get permission to administer an anesthetic and see if I could dislodge the fibroid, saying that unless this could be done a hysterectomy seemed to be necessary at once. In view of the gravity of the circumstances I advised enlarging the consultation and called Dr. H. C. Coe of New York. He agreed with the proposition already made and suggested that she be taken to the hospital where an operation could be done at once. After she was brought to the hospital I was able to manage the case better, and the next day had her placed in the knee-chest position and with the help of two assistants succeeded in unlocking the fibroid from below the ramus of the pubis where it was lodged, and in shoving it up into the abdominal cavity, thus relieving the impaction. The pain continued, however; there was slight rise of temperature, and it was feared that the impaction which had remained several days might have started a process of necrosis. A second consultation was called for the purpose of determining whether a hysterectomy should not then be done. The patient was prepared for abdominal section, and when under ether it was discovered that the fibroid remained above the pelvic bone, and that the cervix was practically free from any fibroid thickening. The normal uterine tissue, which had stretched to accommodate the fetus, was sound. We declined to operate and put the woman in bed, and after several days of careful nursing the temperature fell, a normal condition came on and she was delivered of a healthy child. The delivery in this case was very troublesome owing to the fatigue of uterine muscle and its apparent inability to expel the fetus. Dilatation was fairly well secured and the forceps were put on high up and the child was delivered. The placenta was implanted on the right side, fortunately, and the fibroid was not infected; and although there was considerable laceration of the perineum, which was immediately repaired, no septic symptoms followed. The fibroid was not materially diminished, but it is not six months since delivery. The opinion that the delivery of a three-months' fetus

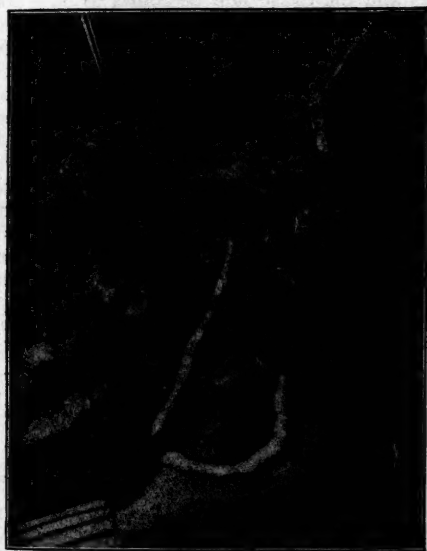
could not be secured through the natural passage while the fibroid was impacted was concurred in by the three men who saw her. After the dislodgment of the fibroid the risk of waiting for a natural delivery was accepted because the neck of the uterus was not involved, and because there was a sufficient amount of healthy uterine tissue on the right side posteriorly to allow of dilatation.

Case V.—Last year a woman, aged forty years, who had borne three children, was sent to me for examination. She was in the fourth month of pregnancy and had been complaining of pain that was unusual and had gone to her family physician, an excellent man, who had made an examination and found a fibroid tumor in the anterior wall of the uterus. This tumor was directly in the anterior wall, beginning at the cervical junction

with me and concurred in this opinion. Supravaginal amputation of the uterus was done, an elastic ligature being placed above the point of incision, and the uterus and its contents removed entire. The patient made an uneventful recovery. A photograph of the fibroid shows the uterus split from before backward with the placenta attached. (Fig. 1.) The shrinking of the thin uterine muscle above, due to its immersion in alcohol, does not give a correct idea of the space in which the child rested above the placenta and fibroid. This case demanded operation more urgently than any that I have seen, and there was no doubt in the minds of some half-dozen good surgeons who saw the woman but that an operation was absolutely necessary.

Case VI.—Last year Dr. L. A. Van Wagner sent to me for examination a woman whom he had only seen casually and who had been under no medical care previous to her coming to the hospital. She had been flowing continuously for about a year, and the examination which had been made showed that there was a small tumor in the vagina and a larger one in front at the base of the bladder. She was forty-seven years old and weighed one hundred and eighty-five pounds. She said that nineteen years ago she had given birth to her first and only child. Labor began at ten o'clock in the evening and terminated at seven o'clock the following morning. She did not recollect that anything unusual had happened, and had no special medical care at the time or afterwards, although a physician was present at the time of the birth of the child. She was able to sit up on the ninth day and was about the house five or six days later. An offensive discharge followed labor, which was continuous, so that a napkin had to be worn for a long time. She had severe headaches and backache which also continued for a long time. She began menstruating three months after delivery and flowed excessively and had great pain, but after a time the periods became more regular, occurring every three weeks. On admission to the hospital she was found to be anemic, but otherwise in good health. She had a large, capacious pelvis, short, large vagina, and a relaxed perineum. A mass was found at the base of the bladder which was drawn down easily, came out of the vulva, and was found to be the neck of the uterus, about three inches long, torn across the posterior wall at its junction with the body of the uterus, so that the cavity of the uterus was entered through an opening large enough to admit two fingers. In this opening was a submucous fibroid projecting about the size of an egg, and having a pedicle attached to the anterior wall of the uterus. A male sound passed into the cervical canal and through the opening into the vagina showed no cicatrix of the cervix where any dilatation or tear had ever occurred, and a small circular os which had never been dilated. The wall was thickened and fibrous, both posteriorly and anteriorly, at the point of the rent, the tissue being perhaps an inch thick. (A photograph of this is shown in Fig. II.)

FIG. 1.

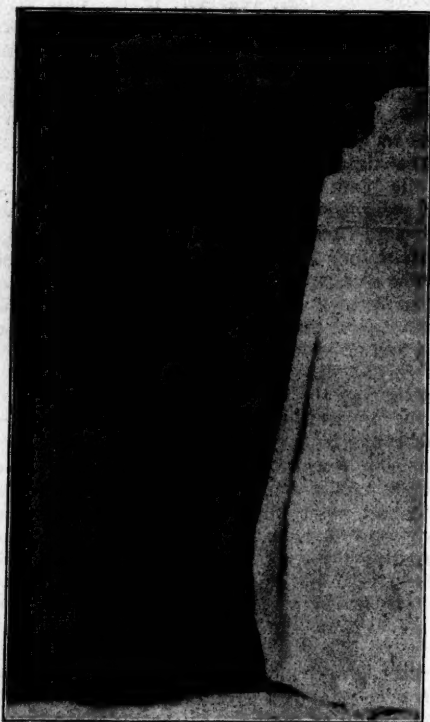


Fetus, placenta and its implantation; uterus and fibroid bisected.

ture of the vagina and protruding forward. It was larger than a coconut so that the uterus was shoved backward, and about all that could be felt in the vagina was a hard fibroid mass. There was but a small segment of the cervix that seemed free enough to warrant the supposition that it would dilate, and it was decided that a miscarriage could not be produced and that a natural delivery would be impossible. The question of allowing the condition to remain until near the time of natural delivery and then doing a Cesarean section was discussed, but this plan was abandoned because there was not room enough above the fibroid in the anterior wall of the uterus to deliver the child safely, and it was thought that the fibroid would be infected by the operation. Dr. H. C. Coe also saw this case

After removing the polypus and curetting the uterus, which measured four inches in depth, the half-detached neck of the womb was amputated and a new cervix made. The amputated neck was intact and was some two and a half inches long, and its dissection showed no scar-tissue and no evidence that it had ever been dilated. I am forced to conclude that this very rare case was one of spontaneous delivery of the child through the posterior wall of the uterus, before which the neck of the uterus was torn and a spontaneous recovery occurred. I think these photographs taken in connection with the history of the case show a unique condition

FIG. 2.



Uterus presenting at the vulva, the sound showing the rent in its posterior wall.

and a recovery the like of which I have never seen reported. It is probable that the fibroid thickening of the anterior wall of the uterus, which extended down so as to involve the cervix, made this uterus unable to dilate enough to admit and give exit to the head of the child.

The cases that I have related seem to me to be sufficient in number to indicate, in a general way, that the rule may be established that where the lower third of the uterus and the entire cervix are free from any neoplasm, the physician may safely await the result of the pregnancy, even if the fibroid is of considerable size. If a neoplasm of any considerable size is found opposite the in-

ternal os, especially if it is large enough to in any way block the birth canal, then the question as to waiting until the child is viable and doing a Cæsarean section, or whether a total hysterectomy must be done early, is determined by the position of the fibroid, whether it is in the anterior or posterior wall of the uterus. An impacted fibroid requires an early hysterectomy unless it can be released, or unless the fibroid is high enough up so as not to involve the lower third of the uterus to any considerable extent. The dangerous position for the fibroid is in the anterior wall of the uterus, low down, because it would be difficult to do a Cæsarean operation successfully at any time. A uterus sometimes ruptures because of a neoplasm of no very great size which involves the lower segment of the uterus and the cervix; and unless this accident is prevented by very early operation it is probable that in most cases of rupture of the uterus sudden death occurs and the cause will be found to be a fibroid tumor.

After a delivery at term or a miscarriage at any time if the uterus has a fibroid that becomes infected a hysterectomy should be done at once. In every case of fibroid uterus when pregnancy occurs the patient should be carefully watched, and especially if the neoplasm is in the lower half of the uterus. A subperitoneal fibroid, especially if it has a pedicle and is attached to the upper half of the uterus, is not likely to do harm unless sepsis follows delivery. Such a fibroid can be removed before delivery without necessarily producing a miscarriage.

TOXINS FROM A CHEMICAL AND PATHOGENIC STANDPOINT.

By A. E. AUSTIN, M.D.,
OF BOSTON, MASS.;

PROFESSOR OF MEDICAL CHEMISTRY IN TUFTS MEDICAL SCHOOL,
AND

I. H. CORIAT, M.D.,
OF BOSTON, MASS.;

ASSISTANT IN MEDICAL CHEMISTRY IN TUFTS MEDICAL SCHOOL.

At the present time, when advances in pathology and bacteriology are so rapid that books of to-day contain facts unknown a year ago, and when the habits and environments of bacteria as to food, temperature and moisture are almost as familiar to us as those of orchids and chrysanthemums, we are apt to attribute to the bacteria themselves the pathological changes, associated with each and every specimen; nothing could be more false than to attribute to the tangible thing which we can see, *i.e.*, the bacterium, the changes in tissue which are really due to the intangible thing which we cannot see, *i.e.*, the toxin, the product of the bacterium. The bitter almond is harmless under certain conditions; we can handle it, inhale it, even inject it into the blood without injury, but as soon as it enters the stomach, and its enzyme, emulsin, splits off the hydrocyanic acid, then it becomes extremely poisonous.

Thus, while bacteriology has been able to elu-

cidate many misty points in the history of disease, it has reached its limit and has nothing more to offer us; but now the chemist steps in and the question becomes a chemical one as Hoppe-Seyler predicted it would, years ago, when bacteriology was first introduced into the University of Strassburg, as a separate branch of study. The task of chemistry is, then, to determine the nature of these poisons produced by bacteria, and right well have many of her devotees, such as Brieger, Gautier and Nencki, attacked this problem; their work abounds with new-found facts.

For convenience, they have all agreed to call these substances, toxins, in contradistinction to ptomains and leucomains, although we must confess that the distinction is not so carefully drawn as we might wish. If we allow the term ptomain to represent the basic substances formed in decaying albuminous matter, as Selmi first used the term and which are composed of a mixture of neuridin, cholin, ethylendiamin, putrescin, cadaverin, etc., as Brieger has shown,¹ then we are allowed to use the term leucomain for those pathological products formed by the abnormal living cell, or living cell in a diseased state in the human economy. We have an example of this, for instance, in the excessive production of what is normal to a limited degree, xanthin, kreatinin, adenin, etc., which, of course, may be the result of a diseased process and not the cause. We can confine the term, toxins, then, to those noxious products of bacteria, formed in the animal body, or, what is quite similar, in pure culture, since the conditions of the latter are quite analogous as far as moisture, temperature, etc., go, to those in the former, while it is, of course, much easier to procure our toxins from culture than from blood or other fluids of diseased individuals.

These minute organisms like other living beings, take in nourishment which, in their bodies, is subjected to certain chemical changes, oxidation, synthesis, etc., by which the simplest as well as the more complex substances may be formed. We find an admirable illustration of this in the formation of alcohol by the yeast-cell from sugar, a noxious as well as a useful substance in proportion to the amount used. In an analogous way, we may have diphtheria of such a mild type that the individual may not be inconvenienced at all, or so severe that the life is endangered; all depends upon the amount of the toxin evolved by the bacillus and absorbed by the individual.

At this point it will be well for us to take an account of stock, so to speak, and to arrange in order what is known concerning these evanescent products of the micro-organisms of different diseases. We are not speaking now of serums, of which there are many in daily use; these from their method of manufacture must necessarily be made up of several substances and undoubtedly contain the diluted toxin or, as bacteriologists choose to call them, antitoxins. What we choose to call toxins are the extracted crystalline products from the pure culture, soluble in water and usually in the form of the chlorid.

From the staphylococcus pyog. aureus. Brieger² was able to obtain a toxin, in the form of a chloride, which reacted to all the alkaloidal reagents, but was not tested by injection into animals. In fact, Panum,³ the Danish physiologist, should have the credit of first calling attention to this subject, having been able to extract from the pus of a case of septicemia an active poison of a chemical nature, and was able to demonstrate the toxic effects of certain microbic diseases were not at all different from those of vegetable poisons like strychnine or coniine. But Brieger was able to procure enough of these products to actually perform an elementary analysis and to demonstrate their chemical formulæ.

Armand Gautier⁴ has summed up briefly and well the nature of toxin as follows: "All infectious microbes act upon the organism by the poisonous products or toxins which they secrete. These poisonous products are chemical substances susceptible of filtration, precipitation and resolution. These toxins are usually complex, made up of an alkaloidal material and a nitrogenous substance which is very active. The primary effect of all these toxins is rise of temperature, and probably all fever is produced by the agency of some one of them.

From the streptococcus Brieger was unable to isolate any characteristic toxin, but from the Koch-Eberth, or typhoid bacillus, he was able to obtain a toxin which, injected into a guinea-pig caused salivation, dyspnea, paralysis of the hinder extremities, dilatation of the pupils and diarrhea. This substance in the form of chloride reacted to most of the alkaloidal reagents. The same author has described a crystalline toxin which he has extracted from the tetanus bacillus, and which when injected causes all the symptoms of tetanus. Following these investigations further, we find that Roux and Yersin⁵ were able to isolate from a Klebs-Loeffler bacillus culture an active toxin which, they claim, has many of the characteristics of an enzyme in that its activity is very much diminished when heated to a temperature of 58° C., and completely destroyed at a temperature of 100° C. The activity of this poison extracted is also comparable to that of enzyme in the excessively small amount necessary to produce results; it was thus proven that one-half of a milligram was sufficient to cause the death of a guinea-pig.

Later Baldi⁶ found an active toxin in diphtheria cultures and regards this noxious principle as a substance replacing the sulphur in the protein molecule. In 1896 Brieger,⁷ by a new method, here given, succeeded in extracting from antitoxin serum an active principle of which he was able to obtain .1 gram in 10 c.c. of the serum. From the bodies of the bacteria, after the culture media plus the bacteria had been filtered through a porcelian filter, he was able to obtain a powder of which 0.01 grams, suspended in water, would kill a guinea-pig in forty-eight hours.

Vaughn⁸ has also been able to obtain from the culture of species of bacteria found in drinking water, supposed to have caused typhoid fever, an

active toxic principle, soluble in water, which does not respond to the usual reagents for albumen but possesses the characteristics of an alkaloid, yet there is a rise of temperature, abdominal distention and distress with tenderness. The animals fall upon their sides and have vomiting and diarrhea.

Methods of Extraction.—The starting point of all processes is first to concentrate the solution containing the cultures, either before or after filtration through an unglazed porcelain filter, which separates the bodies of the bacteria from their formed toxins. This concentration must always be done at a low temperature for obvious reasons, and, if an attempt is to be made to obtain them in their crystalline form, a small amount of hydrochloric acid is to be added so that the fluid shall react slightly acid. From this point the methods differ, and we have four distinct ways in which they can be isolated.

(1) Brieger's method, briefly stated, is, after concentration and filtration, to precipitate with an alcoholic solution of lead acetate, filter, remove the lead by sulphuretted hydrogen and evaporate to a syrup; this again is to be extracted with alcohol and the alcoholic solution to be precipitated with an alcoholic solution of mercuric bichlorid. This mercuric precipitate is now cooked out with water, freed from both alcohol and mercury and reduced to a syrup, neutralizing the solution carefully with soda, so that it shall react only slightly acid. This is again extracted with alcohol, filtered, the alcohol driven off, and the residue taken up with water which now contains the toxins in a pure form and the crystals are readily obtained by evaporation over sulphuric acid in a desiccator; or, we may add gold or platinum chlorid and obtain the double salt of gold or platinum and the toxin as a chlorid.

(2) In the method of Roux and Yersin, the liquid containing the toxin, after filtration through a Pasteur filter, is concentrated to a syrup, extracted with 80 per cent. of alcohol, the alcohol driven off by evaporation, 5 c.c. of water added and the whole poured into a dialyser, and allowed to remain twenty-four hours, when the water in the outside glass is found to be very toxic.

(3) The method of Stas Otto, used so often for obtaining alkaloids from organic substances with which they are mixed, consists of cooking the cultures for an hour or so with a dilute alcoholic solution of tartaric acid, filtering, evaporating to a syrup, again extracting with alcohol (absolute), driving off the alcohol, taking up the residue with water and shaking respectively with acidified ether, alkalinized ether, and, finally, with ether containing ammonium chlorid.

(4) Brieger and Boer have devised a fourth method which consists in the following procedures: Add to the culture media, after they have been filtered through porcelain, two times as much: 1 per cent. zinc chlorid solution, wash the precipitate and shake it up with a 3 to 6 per cent. solution of ammonium carbonate, add zinc phos-

phate until all is dissolved and a cloudiness from zinc phosphate results. Filter, saturate the filtrate with ammonium sulphate, dissolve the precipitate in water, and shake this with sodium sulphate, filter, and the toxins are found in the filtrate. Of these methods the first has proved inefficient in providing enough of the toxins for satisfactory examination, for two reasons: (a) Because the toxins are destroyed even by a very low temperature and are undoubtedly decomposed by the repeated use of sulphuretted hydrogen; (b) because unquestionably a part of the toxins are thrown down by the first precipitation with lead. The second method of Roux and Yersin is a bacteriological rather than a chemical one, and the resulting product is a mixture of various toxic products, one of which is albumose-peptone, which the alcohol fails to precipitate and which, upon being injected, causes many of the symptoms wrongly ascribed to the toxin. It is interesting, however, as showing that the microbic poison can pass through an animal membrane and that it is closely combined with albumoses, which are the constant constituents of culture media after inoculation. The third method is pronounced worthless by Brieger for the extraction of toxins, however useful it may be for the isolation of the vegetable alkaloids.

With the fourth method, we have had no experience, although it would seem to do away with the three difficulties of the first method, *viz.*, the use of heat, sulphuretted hydrogen and lead. We have also found that the sodium chlorid, formed by neutralizing the excess of hydrochloric acid by soda in the first method, is very hard to remove and the crystals are apt to render the crystalline toxins impure. These toxins, when once separated from their combination with the albumoses, are precipitable by all the alkaloidal reagents, such as phosphomolybdic and phosphotungstic acids, iodates of cadmium-potash, gold and platinum chlorids, picric acid and bichlorid of mercury. Almost all of these precipitates are crystalline and the double salts, formed with platinum and gold, are generally chosen for elementary analysis on account of their greater stability.

Our own efforts were confined to the cultures of typhoid and diphtheria bacilli and consisted of the following experiments:

Experiment I.—One liter of culture of typhoid bacilli, filtered through a porcelain filter and obtained through the kindness of Dr. R. M. Pearce of the City Hospital Pathological Laboratory, was subjected to the process of Brieger and the final product was a few c.c. of a colorless liquid which gave none of the reactions of protein matter, but gave precipitates with the following alkaloidal reagents:

Gold chlorid, crystals; platinum chlorid, none; picric acid, none; bis. potass. iodid, copious; cad. potass. iodid, copious; potass. iodo-iodid, none; mercuric bichlorid, none.

The crystals formed with platinum chlorid were long, yellow, needle-like bodies, often cross-

ing each other at various angles and resembling very much sheaves of wheat or very much similar to crystals of tyrosin as they are found in urine or from pancreatic digestion, and were much as described by Brieger as a double chloride of platinum and typhotoxin. These crystals were easily soluble in water and after all the substance had been precipitated by platinum chlorid, the crystals were lightly washed after drying, and then dissolved in water from which the platinum was removed by sulphuretted hydrogen. There resulted an absolutely protein free, colorless solution which, when allowed to evaporate over sulphuric acid, gave several centigrams of a crystalline substance whose general form of crystallization was that of a tetrahedron, absolutely colorless and perfectly soluble in water. In order to verify this substance still further .010 mgms. were injected into a rabbit weighing 1038 grams on March 6th, with no appreciable effect. On March 7th, .020 mgms, were again injected, also with no effect, and March 8th once more .040 with a similar result. On March 13th, at 1.50 the remainder of the substance, amounting to .1125 gms. was injected into the same rabbit with almost immediate results. Within ten minutes the respirations ran up to 460 per minute; in fifteen minutes after the injection there was paresis of the hinder extremities of such a nature that the rabbit could not stand, but lay upon his side. The legs could be feebly retracted when irritated by pinching or by touching them with a sharp instrument. Following this there was a discharge of liquid feces; the head was drawn back, and there were slight convulsions. At 3.30 the animal had recovered from the initial severity of the symptoms, but was kept under observation for the following week during which it was very sluggish, ate very little, had loose discharges mixed with mucus and blood, and on March 21st died, eight days after the first symptoms.

During the latter period of its life there was an ashen blue hue to the ears, reminding one of poisons producing methemoglobin, loss of pupillary contraction and slight trismus of the jaw. The temperature taken on the day of its death was 21° C. and there was a diazo of Ehrlich reaction in the urine, while the animal remained in a state of stupor. Five hours after death an autopsy was performed upon it with the following results: Peritoneum, covered with white patches and serous exudate upon parietal and visceral layers. Intestines, hyperemic but no evidence of any ulcerations. Kidneys, enlarged, pyramids very much engorged with blood. Cortex, normal. Spleen, much enlarged and also engorged with blood.

Experiment II.—One liter of pure culture of typhoid bacilli, unfiltered, was subjected to the Brieger process, but the process of purification was carried a little further as suggested by him: after the final removal of mercury in the former process, the solution was evaporated to a syrup, extracted once more with alcohol, the alcohol

driven off, the residue taken up with water, the acid neutralized with soda, acidified with nitric acid and the whole treated with phosphomolybdic acid. This precipitate, composed of the double compound with the acid, was now washed, decomposed with neutral lead acetate, the lead removed, and the solution somewhat concentrated. In this was found the toxins, since the solution was absolutely free from protein substance, but still gave precipitates with the following alkaloidal reagents:

Gold chlorid, yellow, six-sided plates with some longer narrow plates which still maintained the pointed ends, thus preserving the general six-sided shape; platinum chlorid, needle-shaped crystals, arranged in a more or less definite sheaf-shaped form. Potash bis. iodat, amorphous precipitate. Potash cadmium iodat, amorphous precipitate. For want of sufficient material, no attempt was made to inject this product into an animal.

Experiment III.—One liter of diphtheria bacteria culture, grown for two weeks and filtered through porcelain, was treated by Brieger's method. The isolated product showed no reaction with Millon's reagent, gave no xanthoproteic reaction and failed to respond to the biuret and Adamkiewitz tests, thus proving that it was absolutely free from protein matter. It gave, however, the following reactions: Phosphotungstic acid, heavy, copious, white precipitate; phosphomolybdic acid, heavy, granular precipitate; platinum chlorid, fine, granular precipitate. Allowed to evaporate over sulphuric acid, this substance crystallized in long flat plates of a slightly yellowish color, of which the amount obtained was .1486 grams.

May 10th, .025 grams were injected into a kitten weighing 652.5 grams without any appreciable effect. May 11th, .040 grams were injected into the same kitten, and the following symptoms came on almost immediately: There was general uneasiness, accompanied by salivation. On May 18th, in hopes that this toxin might prove efficacious in rendering the kitten immune, it was inoculated with a pure culture of the Klebs-Loeffler bacillus and a control kitten that we will call No. 2 was also inoculated with the pure culture, but not with the toxin.

Kitten No. 1, inoculated with both toxin and pure culture, died May 28th, after ten days of illness, characterized by great muscular weakness, but no paralysis. The autopsy showed a purulent infection with a few streptococci. The liver showed areas of hemorrhagic infarction and was slightly fatty. The mesenteric arteries were highly injected but otherwise the organs were normal. The control kitten, No. 2, died May 25th, having had during the meantime loss of voice, accompanied by great muscular weakness, paralysis of the lower extremities followed by paralysis of the upper, and great emaciation. There was also a discharge of dark blood from the nostrils. The autopsy showed the mesenteric arteries highly injected, the bladder full of urine

which contained albumin. The kidneys enlarged, injected glomeruli with areas of coagulative necrosis; the external surface was roughened. Liver pale with some fatty degeneration. No membrane of fauces or trachea.

Experiment IV.—One liter of a culture of diphtheria bacilli, filtered as before through porcelain, was treated by the Stas Otto method, using hydrochloric acid instead of the usual tartaric acid. The results were as follows: (1) The ether from the acid solution spontaneously evaporated gave .0024 grams of needle-shaped crystals. (2) Ether from the alkaline solution (NaOH) gave .0085 grams of plate-like crystals. (3) Ether from the ammonium chlorid solution gave nothing.

A third kitten was injected with the products of the first evaporation (1) with the almost immediate onset of symptoms which consisted of dilatation of the pupils, unaffected by light, paralysis of the lower limbs and a great acceleration of the respiration, but after an hour's duration the symptoms ceased and the kitten fully recovered. The residue from the second ethereal extract produced no effect, when injected.

Experiment V.—A liter of filtered diphtheria culture was precipitated by ammonium sulphat, the precipitate dissolved in a little water and dialysed twice to remove the salt. The resulting solution was precipitated with 95 per cent. alcohol and the precipitate washed with absolute alcohol and ether, then dried over sulphuric acid. The resulting product was a brownish powder, soluble in water, giving the following reactions:

Phosphotungstic acid, yellow precipitate; biuret, positive; Millon's reagent, positive; xanthoproteic test, positive.

Kitten No. 5 was injected, June 30th, with .100 grams of this toxic albumose. July 7th, with .200 grams and July 11th, with .400 grams. The chief symptoms were paralysis of the limbs and great irregularity of the respiration. The urine contained albumin and casts. The animal died July 12th, and the autopsy showed necrotic spots in the liver, lungs and spleen.

Experiment VI.—One liter filtered diphtheria culture was treated by the Brieger method. The resulting substance consisted of long, flat, yellow crystals. The crystals were soluble in water and in solution showed the following reactions:

Biuret, faint rose; Millon's reagent, negative; exantho-proteic, negative; Adamkiewicz, negative; platinum chlorid, fine gran. precipitate; auric chlorid, heavy precipitate; mercuric bichlorid, heavy precipitate; phosphotungstic acid, copious precipitate; phosphomolybdic acid, copious precipitate; iodo-potass. iodid, fine gran. precipitate; potass. mercur. iodid, heavy precipitate; potass. bis. iodid, heavy precipitate; potass. cad. iodid, heavy precipitate; stannous chlorid, no precipitate; picric acid, no precipitate; tannic acid, no precipitate.

There was then injected into a rabbit .100 grams and there followed symptoms of restlessness and salivation. This continued until the next

day, but the animal finally recovered. Whether these toxins replace the sulphur in the albumin molecule or not cannot be absolutely stated, but as albumose, of which the cultures largely consist, is never free from sulphur, it is to be doubted. It seems much more reasonable to regard them as proteids much like casein with its associated iron, corresponding to the toxin. As the cultures uncoagulated by heat, even in an acid solution, but are precipitated by ammonium sulphat, it is much more probable that they consist of albumose to which the toxins are bound much in the same way that the iron or phosphorus is bound in caseose or the digested casein. Another fact is also evident, that these toxins are much less stable than indol, skatol and phenol, analogous substances formed by the bacteria in the intestinal tract, but which can be easily separated from the feces by distillation, a process which utterly fails to procure anything from the cultures of pathogenic microbes. Heat is undoubtedly the great factor in this case. These experiments show also that they are much more tenacious than the ordinary alkaloids in their adherence to the substance with which they are combined since the Stas Otto process, used in one case, is amply sufficient to isolate practically the whole of the alkaloid in the one case while the amount of the toxin obtained was very slight.

A more intimate knowledge of these toxins is always obstructed by the tiny amount which can be obtained; under the most favorable circumstances only about 0.2 grams can be obtained from a liter of the cultures. Brieger has tried to overcome this by using enormous quantities for his extractions, but apart from the difficulties of manipulating such huge amounts, there is always a doubt whether we have actually obtained the true active principle when we know that one bad oyster may kill a human being or diphtheria be fatal in three days. We have, of course, the possibility that the bacteria produce their toxins much more abundantly in the living body than in culture media, that they grow with greater rapidity is very doubtful.

It seems almost beyond cavil that the substance which we obtain is actually the element which causes the changes in living tissue in disease from the similarity of symptoms observed, paralysis chiefly in the diphtheria toxin, and comatose condition in the typhoid toxin. The primary action of these bodies is evidently upon nerve centers of respiration and locomotion, the secondary or more remote action upon the liver and kidneys or organs employed in the elimination of these poisons. Our efforts to stay the progress of disease by preliminary injection of the extracted toxin in gradual increasing doses seems to have failed, although the disease in Experiment III. ran a different course in the animal injected with both the toxin and the culture, from that in the animal injected with the culture alone. The pathological changes were also somewhat different, but these may have been only accidental.

In closing, we beg to say that we have worked

over old chaff, and have nothing new to offer, but still remain convinced that the road to new discoveries in medicine lies along this line, and still following up this pursuit, we hope to overcome the difficulties associated with this isolation of toxins so that the amount may be much larger or the potency much greater.

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ALCOHOL AS A GENERAL STIMULANT AND HEART TONIC; ITS USE TO THE ANIMAL ECONOMY IN HEALTH AND DISEASE.

BY T. J. HILLIS, M.D.,
OF NEW YORK.

(Continued from p. 452.)

Alcohol in Acute Disease.—One of five causes always contributes to the failure of alcohol in the sick room to-day, namely, to begin its use too early or too late; to give too large or too small a dose, or to be irregular in its use. Almost always one or more of these causes is the prime factor in its failure to accomplish the purpose for which it was given; then, again, to entrust its use to an incompetent nurse is another fruitful source of failure. The truth is, at the critical time, the physician alone must be the sole judge of the amount to be given, and this amount must be regulated by the effect produced; at the supreme moment he must be on the ground and on the firing line to take personal command as watchman and guardian of the interests of his patient if he is to hope for success. By directing the battle from his office and trusting to excited and inefficient subordinates, his efforts will fail as they have failed, and to-morrow he will contribute an article to a journal of hygiene and moral therapeutics as full of inaccuracies and bad judgment as was his treatment of the dead man who so recently passed from his charge.

In pneumonia there may come a time when a quick and ready stimulant will tide the heart over a crisis, when convalescence is easily established. When digestion is good and heart action satisfactory for the lung area involved, the temperature will generally take care of itself without antipyretics, and in most cases will be found to range from 101° to 104° F. In a case of this kind, temperature has not a world of importance and never has, as long as the heart remains true, firm and strong, and from 90 to 104 at the wrist. This case will get well on beef extracts and milk; it needs no stimulation other than the normal supply which a reasonable digestion can afford.

¹ Read at the 16th Annual Meeting of The New York State Medical Association, held October 24, 1899.

In typhoid, following the beaten track—a typical case—when the subject is young and stomach faithful, with a temperature curve following the course characteristic of this disease, from beginning to end no alcoholic stimulant is needed. In diphtheria, although the system may be profoundly affected by the poison, with temperature high or low, if the patient has good digestion, and he may have, he will pull through without alcohol.

The prime factor in all these cases seems to be the stomach, not the disease. The cases which demand alcohol and which will result fatally without its intelligent use are those of pneumonia in which the heart has done excellent work for five days and a half; when it did this work in spite of a persistent high temperature (104°-105.5° F.); when there is considerable lung involvement and cerebral symptoms attended with low delirium. At this stage the stomach has lost its desire for food and the heart begins to weaken. It will be observed the heart follows very closely in the footsteps of the stomach. Now, if this heart could be kept up to its work and pump the blood as usual through the lungs for twelve hours more, the crisis would be reached and could be passed in safety, but how can this be done, as we see the stomach in rebellion, refusing to digest anything. At this time there is a loathing for all kinds of food; the abdomen is tense and tumid from flatus that cannot be expelled, because the muscular layer of the bowel is paralyzed. Evidences of dissolution are beginning to be apparent on every hand, cold perspiration, feeble, rapid pulse and a general "moribundness," with areas of hyperesthesia. If something would be now administered that would quickly pass through the walls of the stomach and reach the circulation without preliminary digestion, and if that something contained the elements of food, or, by its transformation in the tissues liberated energy held in reserve, it would save the jaded heart which has now all but stopped by supplying it with power to enable it to continue its work for the ten or twelve hours when relief is sure to come, and nature again swing her own pendulum. Have we that something at our command at this supreme moment? We have, but the physician in charge is afraid to touch it in the fear that if his patient gets well he may become addicted to the drinking habit; besides, he does not believe in intoxicants any way and was grieved to see his patient drunk six months previous. On that occasion it was on the anniversary of his wooden wedding, after which he was sick and his physician remonstrated on the evil of intemperance and commanded him to put the bottle away, which he did. He was right then; he is wrong now. Then the whiskey was a depressant and a paralyzer—a poison—now it will act as a powerful tonic, food and a liberator of pent up force.

The physician is trying every known remedy to save his patient, but he is sinking rapidly. Digitalin, nitroglycerin and strychnine are in turn tried, but they all fail as they only whip a jaded

horse; he wants food rather than a whip and none of them can supply it. The physician sees death in the face of his patient, apprises the family of his fears and suggests that a clergyman be called, recommends the inhalation of oxygen gas as a final resort, says a few kind words to the family about a reunion in Heaven, and takes leave of his patient forever. A member of the family has heard of a case of pneumonia successfully treated by the timely use of alcohol; he was afraid to mention this fact to the physician, knowing his antipathy to the stuff; now that he has taken his departure, he runs after the man of whom he has heard so favorably. This physician administers one tablespoonful of old whiskey in preference to brandy (the latter having higher diffusion power, reaches the brain too quickly and is contraindicated) mixed with two tablespoonfuls of water and a little cracked ice. The dying man's stomach retains it; his heart beats 138 to the minute, full and feeble and somewhat irregular at the wrist. Part of his body is bathed in a clammy perspiration, his tongue is thick, his feet are cold, his face is pale and his eyes sunk. Ten minutes and the physician with finger on pulse gives another tablespoonful of rye with now only an equal quantity of water and ice as before. It is retained, as was the previous dose. It has no bad effect on the pulse, if anything it has improved it, so after five minutes he is encouraged to give another tablespoonful as before. He recollects that now during fifteen minutes he has given the sick man an ounce and a half of whiskey, and his condition has improved decidedly since he began the treatment, for the heart-beat is more regular and the pulse not so quick at the wrist.

His curiosity is now agreeably excited and he places his ear to the dying man's heart to find increased uniformity in strength. Sixteen minutes have elapsed since he first began the rye whiskey treatment: the pulse then was 138, now it is only 128 and firmer. He will give another tablespoonful and does as before, diluting it and with ice. Now eighteen minutes have elapsed, during which time the sick man has imbibed two ounces of whiskey. In two minutes he tries the pulse again; it is 123, firmer still and more regular, although not so full, but with higher tension. Now, he is eager to communicate the fact to the distracted family in an adjoining room, and it is that he feels encouraged and has a hope of the final recovery of his patient. An hour has passed since he began his stimulation with whiskey, which consisted of three ounces, but great changes have taken place during that hour; the patient's feet are not so cold; he speaks more coherently; the perspiration is drying up, color is coming back to his face and there is a new light in his eyes. His temperature is again taken; it is 102° F.; it was 104° F. one hour ago; his pulse is now 118, with a promise of more stability.

The physician is tired from his worry and vigil, but he is determined to give the sick man another dose of rye before he leaves for home, hav-

ing now been by the bedside two hours. This time he gives him another ounce of whiskey—two tablespoonfuls, with an equal quantity of water, but no ice, with the request that he sip it slowly, to eat it, as it were. On taking leave of the family—and it is a pleasant leave-taking—he tries the pulse again; it is 114, increasing in force and beating with regularity. The man is beginning to have possession of his faculties as he grasps the physician's hand to bid him good-night as he retires from the room. To the nurse the retiring physician says, "Give two ounces of light bouillon, not too hot, every thirty minutes until my return, in four hours, and if the pulse runs above 120, immediately summon me. According to promise he comes at the stipulated time, and is told that the patient slept soundly for two hours after the second dose of bouillon. The physician was quick to recognize a decided improvement; the temperature is now 99° F., the pulse 102, and the patient convalescing.

Alcohol in Chronic Disease.—When the human system is the subject of an organic lesion like fibroid, or tuberculous phthisis, there is a demand for fats. Substances, which when taken into the system, are easy of digestion and contain material out of which this fat is manufactured in the internal economy, are what is wanted and what must be supplied if the body condition is to be improved. Malted liquors are known to be substances of this class and lend great aid to the physician in his efforts to restore his patient to health. It is also known that the parasite with which the lung is invaded is living on diseased tissues—any other would speedily destroy it; the bacillus has not created the condition in the lungs, but has used the diseased tissue as a means of support and to propagate itself. It is possible with such a state of things that the parasite will devour and exhaust the media in which it lives; this can be accomplished only through an increased nutrition, and anything that will increase this nutrition must be looked on as a therapeutic agent of the highest importance.

Certain wines and the malted liquors are rich in saccharine matter and are as a rule acceptable to the stomach and easy of digestion. The alcohol which they contain needs no digestion; it is the herald which prepares the way and tones the stomach for the more substantial ingredients in the malted liquors, of which it is a part. Both, together, initiate a body condition that is favorable for the reception of other foods, such as broths and many forms of farinaceous and albuminous substances. In a disease like phthisis, the alcohol compounds, such as porter, ale and beer, are of great value if properly and efficiently administered, and must not be confounded with their disagreeable and disastrous effects when given to a healthy man whose system is already saturated with the material they have to offer, namely, carbonaceous and albuminous proteids. In the latter case they do harm, and, if persisted in, present all the pathological changes that are ascribed to chronic alcohol poisoning.

The difference between the sick man and the well man is most striking; the former is prepared physiologically to use up and turn to immediate account all the nutritive material that is in his simple or compound alcoholic beverage, while the latter is unconsciously, but not the less surely, destroying himself; he is giving his stomach double work, besides overworking his liver and kidneys in an effort to throw off the superabundance of material with which his blood is charged. This man cannot oxidize half an ounce of alcohol in twelve hours, whereas the other man can burn up four ounces in half that time. The conditions are different; one man's system is prepared to receive a form of food already digested and not any other; the other man's system is already saturated and repels, rather than attracts, the hydrocarbon material that is now offered already digested and under favorable conditions ready to give up its nutritive qualities to enrich the blood and nourish the tissues.

At a time of shock strychnine probably is more efficient than alcohol, as it has greater oxidizing power. It increases metabolism, as can be seen from its great output of carbonic acid. Nitroglycerin has a very limited application, and in the hands of ignorant practitioners does great harm, administering it as they do under the delusion that it is a heart tonic, while, in fact, it is a depressant and can only aid the heart when the vascular tension is high by lessening resistance to the systole. Digitalis and strophanthus each has its measure of usefulness, but neither can be strictly said to be a heart tonic and at times both do much harm, especially if the heart is not enlarged but feeble with considerable vascular resistance. The administration of oxygen is sometimes useful and often injurious, especially if its application is left to the discretion of an inferior nurse. After looking over the list of so-called heart tonics, not one of them can be said to act as such, with a single exception, that of nux vomica and then its field of usefulness is confined within very narrow limits, while alcohol must take its place with the natural stimulants, food, rest and oxygen.

Conclusion.—Never give alcohol in lingering diseases nor in convalescence from acute diseases if it irritates or upsets the stomach. The stomach is the clearing-house of the human system and it is of the first importance that it should always be in a position to transact business. Alcohol furnishes the grist for the police court and distributes free passes to the Island; it often makes a low form of sneak thief, but never a high-class burglar. Burglars, sneak thieves and murderers are, as a rule, temperance men; their vocation demands that such should be the case.

Alcohol is not so potent for good at a crisis to old toppers suffering from acute or chronic disease, their systems do not respond readily to the stimulation and it is slow to produce the desired effect. In a subject of this kind, the alcohol is not so readily assimilated nor so completely oxidized as in those unaccustomed, or only moder-

ately accustomed, to its use. The good effect of alcohol in these cases is always in the inverse ratio to the quantity consumed by the individual in time antecedent to his indisposition.

Alcohol may be a poison to-day, in dose great or small; to-morrow, to the same man, it may be a physiological agent of the highest efficiency. The intelligent individual, through the guidance of his medical adviser, should be at all times and under all circumstances the judge of the time and quantity to produce a definite result. Alcohol is not an aid to longevity, although if used moderately it is not a hindrance; however, it may be said that, as a rule, those live longest who do not use it other than for its physiological effect. Never drink whiskey in hot weather with the ostensible purpose of cooling off; such a purpose is laudable, but the means employed will prove inefficient and illusive, as the quantity that would reduce temperature half a degree will have a disastrous effect in another direction. Never drink alcohol on starting on a journey, whether that journey be by riding or afoot; it is like filling the pockets with cobble-stones, under the delusion that they assist locomotion; it steadily retards progress, puts the body on the defensive, and continually makes demand for repetition of the alcohol. The alcohol thus imbibed by this constant repetition lowers the temperature, exhausts the body, and in every instance defeats the purpose for which it is taken. One-fourth of the chronic and about one-fifth of the acute diseases among the populace of to-day can be directly traced to this source. Alcohol has the power, physiologically, to raise or lower the temperature; it can do the same thing through pathological processes. It raises the temperature through its properties as a stimulant and tonic and by its virtue as a food. It lowers temperature by its inhibition on the oxidizing apparatus during the process of the transformation of fatty and carbonaceous products into heat, and is a conservator of energy and source of economy to the body.

Pathologically, alcohol raises the temperature by deranging the heat distribution apparatus, irritating the vasomotor inhibiting supply of the peripheral arterioles, effectually shutting off insensible perspiration, and producing a dry, burning skin and a thin, rapid pulse. This condition is described as sunstroke and can take place without the aid of alcohol, but the best specimens are furnished by the assistance of this drug. Alcohol lowers temperature by its direct paralyzing effect on the vascular filaments of the sympathetic, widely dilating the peripheral arterioles and retarding the venous return from the body surface.

Never drink whiskey before delivering a temperance lecture or preaching a sermon; it will develop ideas but cannot formulate them; it will loosen the tongue and increase loquacity, but it will impair the reasoning powers and weaken the judgment.

Whiskey is a necessity to some people after a great mental or physical effort, as the brain-cells

are exhausted and functionate with difficulty. Alcohol jumps through the walls of the stomach, mounts the circulation, enriches the blood and nourishes the famished and exhausted nerve-cells; it does this in four minutes; it takes beef-tea twenty minutes, or, if conditions are not favorable, twice as long, and then it cannot do it half as well as the alcohol. Tea or coffee may fail altogether, but, even if coffee presents its maximum of efficiency physiologically, it is feeble when compared with the action of alcohol. Tea and coffee, by virtue of their action on the brain and cord as excitants, can only stimulate, but stimulation now is contraindicated; what is wanted is a nutritive tonic with basic sedative properties, and that is just what alcohol can furnish.

Never drink alcohol after eating; it cannot aid digestion, and what cannot aid must retard by its weight and bulk; further, it precipitates the digestive ferments, coagulates the albuminoids, and often completely arrests the digestive process. Alcohol or the malted liquors may, and often do, assist digestion when used before eating: by stimulating the gastric glands they excite healthy action in the stomach and favor assimilation. Alcohol's highest value as an aid to digestion is seen about three and a half hours after dinner if fats have formed any part of the repast. Fatty acids are then lingering in the stomach; they refuse to pass through the pyloric orifice, or, if they do, they do it so reluctantly that eructations of acid gas are belched through the mouth and nose. This condition is sometimes described as pyrosis and often occasions much inconvenience. Two ounces and a half of good whiskey, diluted with an equal quantity of water, has a value that no other agent possesses and in this instance it acts purely as a drug, for, by saponifying the fats it destroys the gases, it cleanses the stomach and aids intestinal digestion. At this time the alcohol has no toxic effect, being neutralized by the fatty acids before it can pass through the mucous membrane of the stomach.

A half a pint of whiskey or brandy taken in a draught to-day will save a life; to-morrow the same amount will destroy the life that it saved yesterday, because different conditions prevail. Alcohol destroys the walls of the stomach only after long use and when taken in a concentrated form. There is no truth in the statement so generally made that alcohol suddenly transforms an angelic man into a demon; it has no such power; it is only a revealer of character. If a man is a bad man, alcohol will make him worse; if a kind man, it will make him kinder; it seldom changes one's nature, except through the pathological processes that its long-continued use produces on the brain.

Alcohol creates nothing in the domain of mind, but it can pursue and seize a train of thought far beyond the grasp of the faculties when not excited by its action; it is the bloodhound which pursues a trail through the trackless waste, makes its circuit of the convolutions, and, in

some manner not given to mortal man to know, quickens and facilitates thought. It cannot formulate and systematize this thought that it has excavated from the depths of the convolutions, as the ideas crowd so rapidly and refuse to crystallize. The line of thought which it pursues is an interrupted current with volume and intensity varying with the individual man. The senses are actively alive to the influence of alcohol and scintillate and flash, for the flame of life burns brightly and mental exaltation is high. Any surplus of alcohol taken into the system, that is not immediately burned up in the chemical laboratory of the body and transformed into some mode of motion, such as heat or force, must be injurious and act as an irritant to the stomach and as a depressant to the brain-cells. If the quantity is small this action may not be perceptible, but it is sure to increase in proportion to the quantity ingested.

The amount of alcohol to be consumed by an individual depends on the demand made on the vital forces and the resisting power of the individual; at one time it may be one dram, at another time eight ounces; it is a question of demand and supply and must not be confounded with supply and demand, something which is too often done.

Alcohol is a form of food already digested, but it is not adapted to the normal wants of the body and is only indicated at a time and under conditions which render the digestion and assimilation of other foods impossible. Alcohol has a place on the sideboard and it must have a place in the sick-room, as do opium, quinine, and digitalis, until we discover another agent more efficient and able to supplant it by virtue of its availability, and physiological action. No such agent, however, has yet been discovered (the opinions of others to the contrary notwithstanding). Not one of the drugs mentioned can take the other's place but alcohol, yet each is valuable in its own place at a given time to serve a definite purpose.

51 Charlton Street.

THE TREATMENT OF WHOOPING-COUGH.¹

By HENRY COGGESHALL, M.D.,
OF NEW YORK.

My paper is not properly named the treatment of whooping-cough. It is rather a suggestion for the treatment of some cases of whooping-cough, when the disease is particularly severe and in cases occurring later than in early infancy.

I had an opportunity, in 1883 and again in 1886, to observe epidemics of whooping-cough in the New York Infant Asylum. There was a large number of cases, the disease being almost universal in an institution which held more than three hundred children. The impressions I have now are that no particular treatment of the many used was of much avail and that the disease was of very painful and serious character in institu-

¹ Read before the Harvard Medical Society of New York, February 24, 1900.

tions at least. The treatment of the bronchitis, or what was called bronchitis, seemed to be of the greater importance and to that more attention was directed. There was always some remedy, new or old, for the whooping-cough itself, but after an enthusiastic start and a hopeful period there came discouragement. Jacobi now advocates belladonna in full doses, sufficient to get the physiological effect of the drug. Holt gives generous doses of antipyrin every two or three hours. About five years ago I treated a child's nose and throat for some symptoms, which I do not now remember. The mother told me afterward that it had entirely stopped his paroxysms of whooping-cough. I had not known before this that the child had the disease. In this instance the whooping-cough was in a later stage and it would be impossible to say whether the treatment put an end to such a cough as may go on for months after whooping-cough or really shortened the disease itself. That it had some effect is apparent.

Jacobi and Holt refer to treatment of the nose in whooping-cough by insufflation of powders, but neither has seen the benefits claimed.

Schadewald of Berlin, in 1881, gave the name of trigeminal cough to cough arising from what he believed to be an altered reflex irritability of branches of the trigeminal.

Sommerbrodt, in 1884, quotes Hack: "Certain signs seem to me to point to the fact that in some cases of whooping-cough the attacks may start from the nasal mucous membrane." He promises later work and makes this statement merely as a preliminary. Following the suggestion, Sommerbrodt treated a case by using the galvanocautery on the anterior ends of both lower turbinates. There was a temporary benefit, no cough for eight days and then a recurrence. The treatment was on the thirteenth day of the disease. In 1885 Schadewald said that the relation of whooping-cough to trigeminal neuroses was not determined.

Wille of Berlin, Schadewald's assistant in 1886, said: "The treatment after this supposition (that whooping-cough is due to altered reflex irritability of branches of the trigeminal) does not make it clear; sometimes improvement follows, at other times there is absolutely no result." Michael of Hamburg, in 1886, reported fifty cases treated by insufflation of various powders into the nose. He gives the preference to quinine and benzoic acid. He claims about 14 per cent. of recoveries and improvement in 80 odd per cent. of the cases. The cases are difficult to analyze. No one else, I think, found good results and the treatment appears discredited.

The treatment I have to suggest is to first cocaineize as much of the nasal mucous membrane as can be done by the use of a spray, followed by cotton-tipped probes wet with the solution, then an application of a two- or a four-per-cent. solution of nitrate of silver to the nose and nasopharynx, to be followed by a mild alkaline and

antiseptic wash by spray or by postnasal douching. Such treatment could hardly be carried out in infants, but with children of three years or more it is perfectly practicable. The interest is, however, to know more of the cause of the cough, when means may be found to control or modify it. The good effect of belladonna is, I think, partly due to its action on the nasal mucous membrane. I want to suggest here the use of suprarenal extract applied to the nasal mucous membrane.

Most of the efforts in treating the nose have been to destroy the germs of the disease, which I do not think to be the thing of chief importance. The four cases I have seen and treated include but one with which I could be satisfied. I mean with the stage of the disease at which it was seen, with the careful observation and record of the paroxysms, and with the result. This was in a child of six years, of very intelligent parents. Severe whooping-cough in its sixteenth day. Since four days the paroxysms have been very severe; they number thirty a day. The child vomits after each coughing-spell. After the treatment the cough ceased entirely for twenty-four hours. Then followed two to six paroxysms a day for seven days, when I treated her a second time. I would have chosen to have treated her before. After the second treatment there was not any cough for a day and a half. Four days following the second treatment I treated her a third time, after which the cough stopped. In two of the other cases the disease was in a late stage but the treatment appeared very successful. In the remaining case the disease was apparently aborted in the first two days.

102 East 57 Street.

CLINICAL LECTURE.

A CASE OF PNEUMOHYDROTHORAX WITH GREAT PERMANENT DISPLACEMENT OF THE HEART.¹

BY CHARLES ROSS JACKSON, M.D.,

OF NEW YORK;

ASSISTANT IN GENERAL MEDICINE AND DISEASES OF THE CHEST IN THE NEW YORK POLYCLINIC.

THIS young man, seventeen years of age, is much emaciated, and has an expression of long-continued suffering. His respiration is 42. There are suppurating glands at the angle of the jaw. His chest is extremely thin-walled and the respiratory movement is largely confined to the right side. Inspection shows that the cardiac apex impulse is absent from the left side, but that in the right fifth intercostal space it is present in the nipple line. Above, in the fourth and third spaces the impulse is also marked; and extends nearly to the nipple line in these spaces and to within about one quarter of an inch of the right sternal border. Furthermore, we are able to determine that the cardiac systole is 110 per minute. Men-

¹ Abstract from a clinical lecture delivered at the New York Polyclinic Medical School and Hospital.

saturation shows the left side to be very slightly fuller than the right, the difference being only one-half inch at the xiphoid level.

Palpation shows that vocal fremitus is diminished or absent in all localities except in the infraclavicular and suprascapular portions of both sides, in which areas it is distinctly exaggerated. Although diminished it is easily detected elsewhere on the right side, but in a considerable area on the left side it is extremely feeble, while below, posteriorly and laterally, it is absent. The heart is located as by inspection and the systole is found to be fairly strong.

Percussion reveals a dull area corresponding to the heart as previously located. It is conical in shape, having the apex downward in the fifth space, the base upward and to the left. Dulness extends almost from the nipple line to about the right sternal border and upward to the third space. It is a larger area of absolute dulness than one finds over the normal heart in its proper location, and it is also of different shape. It must be remembered that if the heart is displaced the area of dulness will largely depend upon the extent of change in position and presenting portion of the heart. To reach this position there must be considerable rotation of the heart on its fixed tether, the inferior vena cava below and the large blood-vessels above. Bearing this in mind one must as yet reserve opinion as to whether enlargement with displacement or simple displacement, congenital or acquired, exists. Percussion further reveals considerable dulness posteriorly and anteriorly in the apex region of both lungs, bearing out the evidences of consolidation afforded by the increased vocal fremitus. Elsewhere, over the right side, the percussion note is rather high pitched and of tympanitic quality, a vesicular tympanitic or band-box resonance. On the left side, below the dull area already mentioned, a very markedly tympanitic note is heard. This tympany extends all over the left chest down to an area of absolute dulness laterally and posteriorly. This dulness below is limited and, as is demonstrable now, is altered by change of position in the patient, it is not extensive and depends, of course, upon a limited amount of fluid. The liver and spleen are found on percussion to be in their proper positions.

Auscultation shows the breath sounds at the apex of the left lung to be tubular; there is no vesicular element. Harsh breathing is very noticeable and is audible over a limited anterior and posterior area. Vocal resonance is here markedly increased and expiration is much prolonged. Elsewhere over the left chest no breath sounds are audible. Vocal resonance is extremely feeble in the mammary region and entirely absent below. At the right apex there is harsh breathing and prolonged, high-pitched expiration. Here one may detect an abundance of subcrepitant râles. Vocal resonance is here increased, but in other portions of the right lung is less than normal. Auscultation further continued over this lung area reveals a modified vesicular murmur with

prolonged expiration. On the lateral and anterior aspect of the left side of the chest from the third to the fifth space a perfect metallic tinkle may be heard. This tinkle is not constant, but three or four bell-like notes are heard, then a pause, succeeded by more tinkles. Following each tinkle is a metallic resonance which is quite pronounced, a metallic echo, in fact. Of course, these tinkles and the metallic echo denote a space with hard, resonant walls and the presence of air and liquid. It is a matter of speculation as to whether the tinkle is due to a drop striking a surface of liquid or to a bubble rising through such a medium and causing the tinkle by its bursting. There are several theories advanced in addition to these two chief ones. At any rate, in this case you will notice that change from the upright to the reclining position brings out a perfect shower of tinkles. These and the metallic resonance following each form, when combined, the rarest of auscultatory phenomena. Shaking the patient with the ear to the chest brings out a splashing sound of distinctly metallic quality.

The extreme tympany and great diminution of vocal resonance and vocal fremitus with the absence of vesicular murmur below the left apex region proves pneumothorax on this side, and we may assume that the solidification of this lung above is due partly to collapse. Below this tympanitic area we have already proved that liquid is present. On the right side the evidence of solidification of the apex is positive, and when taken in conjunction with the subcrepitant râles points to tuberculosis. The changed vesicular murmur and the diminished vocal fremitus and resonance, together with the abnormal percussion note, vesiculotympanitic, prove the right lower lobes subject to vicarious emphysema.

The heart has been permanently fixed by adhesions after great displacement to the right. This displacement has been caused by a previous pleurisy, the evidence of which we still have. The heart sounds are rapid, but normal when due allowance has been made for change in position. We may regard it as free from enlargement, and may attribute its somewhat large area of absolute dulness to the displacement. The small râles in the right apex, the cough, great emaciation and suppurating glands of the neck all point to tuberculosis as the cause of the patient's condition. This is the usual factor in these cases, pneumothorax being commonly due to a perforation of the pleura by tubercular ulceration.

During the first days of observation the case showed an afternoon rise of temperature, which has since disappeared. The treatment has consisted of increasing doses of creosote and general tonics, including large doses of nux vomica, under which, with occasional attention to the cough itself by codeine or heroin, the patient's condition has improved considerably. It has not been deemed advisable to operate for the small amount of effusion, which has not increased since the first observation.

The past history of the case is of a pain in the

chest, which began about a year ago and became chronic and was followed by an attack of acute severity. It was during this period, doubtless, that the perforation occurred and pneumothorax developed. The general condition was becoming daily worse until the creosote and tonics were given, but under their use the symptoms have been ameliorated. The ultimate prognosis is, of course, most unfavorable in a case showing such marked systemic invasion and which was not treated until the disease was already advanced.

309 West 106th street.

MEDICAL PROGRESS.

Prophylaxis and Treatment of Gonorrhea.—

The internal use of drugs is not usually supposed to have much local effect on a gonorrhea in its acute stage, but after considerable experience J. A. O'Neill (*Med. Record*, March 24, 1900) reports most favorably upon the use of methylene blue. It is best used in gelatin capsules, in one grain doses four times per day for three or four days. In this way a cleanly and complete urethral irrigation is maintained. The urine impregnated with the blue not only thoroughly kills the germ, but also carries away all purulent discharges. Troublesome gastric symptoms may be avoided by the use of the following formula, which has been found to be most efficacious: Methylene blue, gr. i; oil of nutmeg, gtt. i; oil of sandalwood, gtt. ii. This capsule may be given three or four times daily for four days, but should then be given twice per day, and usually is not required after eight or ten days. It is also probable that methylene blue will act as a prophylactic against gonorrheal infection after dangerous intercourse.

Eructation, Regurgitation and Rumination.—

Although these conditions may be associated with organic lesions of the stomach, they are usually the result of functional disturbances or are "habit neuroses," and it is this latter phase which is reviewed by H. W. Lincoln (*N. Y. Med. Jour.*, March 24, 1900). Eructation consists, at first, of the belching of gas; later, of air which has been previously swallowed. No doubt, at first, there was more or less gaseous distention, and as eructation brought relief the habit was formed. There may also be esophageal eructation, in which the air never reaches the stomach. In treatment, suggestion is all important. The patient must make every effort to suppress belching. Bromides may sometimes be of aid. Regurgitation usually comes on during the stage of digestion, especially just at the close of a meal. If it comes on later the taste varies; an hour after eating the taste is sour, due to butyric or lactic acid, or intensely sour and corroding due to hydrochloric acid, or perhaps bitter, due to peptones. It is believed by the author that atony is a prominent factor in these cases. It occurs, of course, in stagnation, cancerous conditions, etc., but the malady is usually of a nervous origin. The pa-

tient should always be forced to swallow the food again as fast as regurgitated, and to eat always in company and slowly. The diet should be arranged according to the gastric secretion and should be light and nutritious. Electricity externally and internally may do good. Small ice pellets are recommended by Alt. Rumination is more rare and may be continued for years with impunity. Heredity, custom and irritation stand preeminent as causative factors. It is a motor dynamic affection of the stomach, occurring among all classes, frequently among idiots and the insane. It is confined to the period of digestion and not accompanied by any symptoms of discomfort. The chemical condition varies from achylic to hyperchloridic. The treatment for regurgitation given above should be strictly enforced, and the patient should be warned against the contraction of the abdominal muscles. A good idea is to administer at meal-times some extremely bitter preparation, as quinine or a combination of condurango, quassia, gentian, nuxvomica and capsicum. A patient usually hesitates before regurgitating this mixture a second time.

Rectal Prolapse in Children.—C. G. Cumston

(*Annals of Surgery*, March, 1900) believes that one of the most important causes of prolapse of the rectum in young children is infection, causing inflammatory changes in the gut-wall with consequent loss of tone. Coughing, straining at stool, etc., then easily cause prolapse. In older individuals polypi, ulcers, piles, etc., lead to prolapse. The prolapsed portion varies in size and shape, usually shows the gut-lumen at its apex, and has a sulcus at the anal margin. It is very important to remember that peritoneum may be pulled down by the prolapsed gut, especially in front, and that small intestine may descend into this peritoneal pouch. Clinically, one cannot diagnosticate the presence of the peritoneal pouch, but must be guided by the extent of prolapse and the known anatomical relations of peritoneum to rectum. When small intestine is present in the peritoneal pouch, the anterior part of the prolapse is more prominent, the lumen at the apex points backward, and the small intestine may be reduced with a gurgle. The prolapse may be reducible, irreducible, incarcerated, or strangulated. The prognosis is never serious. Most cases, in children, yield readily to early medical treatment, a rubber rectal plug, cleanliness, and tonics. Polypus, piles, etc., should be cured. When these means fail, longitudinal cauterization through the mucous membrane often succeeds. In chronic cases, irreducible, or strangulated cases, operation must be done. Of the various operations that of Mikulicz is simplest and best. The anterior wall of the prolapse is cut through, layer by layer, peritoneum sutured if opened, bleeding points tied, and the apposed gut-ends sutured carefully together. The posterior half is then treated in precisely the same way, and the result is an end-to-end anastomosis, with very little loss

of time or blood. The suture line is covered by iodoform gauze, but no packing is used in the rectum. The dressing is removed and the rectum irrigated every day. The bowels are confined till the eighth day, and then kept regular by enemata. If the sphincter is too much relaxed a V-shaped portion may be excised posteriorly. The functional result is usually very good. Stricture seldom results, especially if the suturing has been carefully done.

Treatment of Fatty Heart.—An interesting review of the treatment of fatty heart is given by T. Schott (*Med. Record*, March 24, 1900) who, with his brother, instituted and has carried on for many years a most systematic mechanical and balneological treatment for various heart lesions, at Nauheim. He says that a fatty heart may be diagnosed if the following conditions are detected: An easily induced dyspnea in a person having an abundant deposition of fat upon the body, especially on the chest and abdomen, with a small, feeble, frequent and easily compressed pulse, with final dilatation of the heart and diminished ictus cordis. A general plethora or fullness of the skin may also be present. He deprecates the use of diminished, or rather insufficient, food supply with the hope of decreasing the general obesity, for this must result also in interfering with the nutrition of the heart-muscle, and it is not so much a diminution in weight that is desired as a substitution of muscle for fat. The free use of mineral waters also results, as a rule, in the general debility of the system or in a temporary loss of fat which soon returns when the patient reaches home. Oertel's method of mountain-climbing has been found too severe for many cases. He advises a restricted diet, but one that is highly nutritious, thus not depending upon it for any marked reduction in weight. The gymnastic treatment, consisting of exercises with resistance, is unhesitatingly recommended for all the forms of fatty heart, since the resistance may be regulated to suit the weakest or the strongest heart. Rest should never be indulged in after eating. Massage will often prove efficient in promoting absorption of fat. The balneological treatment is very important and is also carefully regulated according to the stage of the degenerative process. Chlorosis, anemia, rheumatic or arthritic complaints, and old age, require warm temperatures. The baths usually get down to 76° F., and are increased in length up to twenty minutes. Gradually increased concentrations of salt are used in the baths and an early recourse may be had in cases of fatty heart to the effervescent running-baths.

Gout and Rheumatism.—So much unsatisfactory speculation in regard to the etiology of gout and rheumatism has been written that one reads with pleasure the interesting and suggestive article by W. H. Porter (*N. Y. Med. Jour.*, March 24, 1900) on the etiology and dietetic treatment of these conditions. Both chemiophysiological and clinical evidence point clearly to a

defective oxidation on the part of the system as the chief predisposing factor in causing the pathological lesions of rheumatism and gout. This may be due to taking into the body more oxidizable food products than the normal system can fully oxidize, or a diminution in food, especially of a poor quality, may result in a malnutrition and anemia such that the food does not encounter sufficient oxygen for its perfect reduction. But why should this suboxidation result in the lactic-acid or rheumatic condition in one case and the uric-acid or gouty condition in another? Physiological chemistry teaches that the formation of lactic acid in the blood from starches and sugars is untenable. Both conditions are probably due to a suboxidation of proteid food. Uric acid is a normal excretory product not so fully oxidized as urea, always appearing in larger quantities when the nutritive changes of the body are defective. The author believes that it is manufactured in the renal cells rather than in the liver, spleen, etc., as is generally accepted. He claims that its detection in the blood is not yet by any means clearly demonstrated, and its presence in other tissues is explained by supposing a vicarious production of uric acid, resulting from the disturbed nutritive changes and the modified metabolic processes of the protoplasm of those tissues. The increased uric acid formation during digestion results from the diminution in the supply of oxygen to the renal cells at this time, which ordinarily form the more completely reduced substance, urea. Uric acid is, however, an acid product never oxidized into urea but increases in amount whenever there is an interference with the utilization of the full amount of oxygen as compared with the foodstuffs absorbed. The carbohydrates and fats require larger quantities of oxygen, but are more easily oxidized than the proteids, the latter being imperfectly reduced when too large quantities of food are taken and are excreted as uric acid. When the renal cells fail to perform their function, various tissues throughout the body assume an abnormal action and produce uric acid, which is at once changed into an urate of sodium. The oxidation of carbohydrates and fats never results in the formation of any by-products toxic to the system. It is also probable that bacteria, from their presence in the alimentary canal, are largely responsible for the production of various types of suboxidation on account of their interference with digestive processes. Thus the great factors are found to be the prolonged intake of a larger nutritive pabulum than can be perfectly oxidized, and the action of bacteria upon the proteid constituents of the food in the alimentary canal. Both carbohydrates and proteids contain all the essential elements of a food and can alone sustain life, but neither is a perfect food and a restricted mixed diet is by far the best. Animal foods are more easily digested, absorbed and assimilated than carbohydrates. On the other hand, they are more prone to produce suboxidation if not restricted in amount, since they are

nearly all absorbed. Large quantities of the vegetable food, however, are so undigestible that they are never absorbed but are passed off by the bowel. The large amounts of waste material from the vegetable food, while tending to loosen the bowels, are dangerous on account of their irritation to the mucous membrane, sometimes causing catarrhal conditions, and also on account of the fermentative changes which they are liable to induce. To secure the best results under all circumstances requires the utilization of both vegetable and animal foods, a well-regulated mixed diet in which the animal food predominates. A plain animal diet is little liable to undergo putrefactive fermentation, and, if we reduce the total quantity of food ingested so that it will never exceed the oxygenating capacity of the system, the two main factors in the production of gout and rheumatism are obviated.

Citric Acid in Ozena.—The following conclusions are drawn from a large variety of cases of ozena and atrophic rhinitis by Lewis S. Somers (*Therapeutic Gas.*, March, 1900) on the value of citric acid in these affections. (1) The drug is of great value in preventing the fetid odor of atrophic rhinitis. (2) Its successful action depends on its direct application to the diseased tissues; for this reason all foreign material must first be removed. (3) After its use, the ozena usually remains absent from one to two days depending on the extent of the morbid process. (4) It exercises no direct action on the diseased tissues in the direction of restoration to their normal functions. (5) Unless used regularly, its action is but temporary and the ozena becomes again prominent. (6) It inhibits to a slight degree the formation of cicatrices. (7) Finally, citric acid is an important addition to the therapy of fetid rhinitis by enabling the rhinologist to combat successfully the chief complaint of the patient, namely, ozena.

Epididymitis.—This, the most dreaded of complications following or accompanying gonorrhea, is at the same time the agent of most unhappiness to the patient. H. M. Christian (*Therapeutic Gas.*, March 15, 1900) describes a method of treatment for this condition, which is both simple and efficacious. The patient must go to bed and have the bowels moved daily by a saline laxative. A Swedish leech applied over the cord on the affected side gives great relief in the early days of the trouble. Moist heat for forty-eight hours applied continuously contributes largely to the patient's comfort. This is accomplished either by a hot-water bag or best by a flaxseed poultice entirely enveloping the testicle. After two or three days in bed, the further treatment may be begun. For those patients who, through stern necessity are kept ambulant, it becomes quite a question for the physician as to the best treatment. The old method of applying lotions of lead-water, laudanum and aconite, with the wearing of a suspensory bandage, has never appealed to the author as being efficacious. He uses an

application of cotton and oiled silk, the whole dressing covered by a laced suspensory. The ointment used on the testicle is composed of ichthyol, blue ointment and belladonna ointment. Best of all is the local application of guaiacol. Great relief follows the use of this agent within twenty-four hours, even where the patient is compelled to remain on his feet. The use of guaiacol is followed by a smarting and tingling of the skin, lasting no longer than an hour. No dermatitis occurs. It is applied in the form of a twenty-per-cent. ointment in lanolin, and the testicle is first gently massaged with it and then more is applied on cotton kept in place by a suspensory or ordinary gauze bandage. The dressing is renewed every second day. After six days the following may be substituted for the guaiacol:

Ung. hydrarg.

Ung. belladonnæ.

Ichthyol.

Lanoliniaa 3ij

The testicle returns to its normal form in two to three weeks. In private practice it is perhaps better to use guaiacol vasogen than the ordinary guaiacol ointment.

Vaccination.—In a leading article of the *Therapeutic Gazette* for March appear some valuable hints regarding the method of vaccinating properly, which it might be well to summarize and bear in mind:

(1) Don't fail to rinse the part to be vaccinated with boiled water and dry. (2) Never apply antiseptics to the site chosen for inoculation. (3) It is best to draw no blood. A gentle oozing of the serum will give better results. (4) The vaccine must be rubbed thoroughly and persistently into the abrasion. (5) The clothing is not to be replaced until the vaccine is entirely dry. (6) Antiseptic dressings are not to be applied, except in cases in which there is danger of infection from the environment or uncleanness of the patient. (7) The vaccine is not to be exposed to extremes of temperature. High temperatures spoil it. (8) Do not expect to find a swollen arm, indurated glands, high fever, and a suppurating ulcer—these belong to the old-fashioned means and methods of vaccinating. (9) The success or failure of the process is not to be taken for granted on the word of the patient or his parent. If there be found a typical vesicle, or the remains of one or more that may have been ruptured, the patient has been successfully vaccinated. (10) It is not always possible to pass judgment in a hurry as to whether the vaccination has "taken" or not. Sometimes the vesicles are delayed in their development.

Intra-Uterine Douche.—The danger of infecting the tissues and the danger of causing hemorrhage are the two contraindications against invading the uterine cavity during or after labor. The risk of infection is not so much due to the inability to sterilize the douche-tube or instrument as it is to the circumstances under which it may have to be introduced. In private practice the

lack of sterilizing apparatus, of sufficient assistance, and of aseptic appliances, and the situation and difficulty of sterilizing the vagina, make the practice of asepsis difficult. The risk of hemorrhage from use of the douche-tube is greatest in cases in which the uterus is empty and remains enlarged and flabby after labor. At the same time the indications for the use of the intra-uterine douche, according to Edward P. Davis (*Am. Gyn. and Obstet. Jour.*, March, 1900), are just these conditions, septic infection and hemorrhage, which are also its dangers. When there is infection in the uterus, shown by an abnormal lochial discharge, or by fever and other signs of autointoxication, the interior of the uterus should be thoroughly cleansed, as well as explored. As the finger is rarely long enough to make a thorough exploration, the writer uses a douche-curette, very carefully and gently exploring and at the same time douching the uterine cavity. There is very little pain from this procedure, an anesthetic is not needed, and the subsequent disturbance is slight. The vagina must first be made aseptic. Davis prefers to use a normal salt solution when the patient is depressed, or sterilized water. He does not believe in using solutions of mercury within the uterus, because of absorption. If further douching is desired the writer uses a douche-tube of glass, fenestrated on the side only, and with a groove running lengthwise of the tube for the return of the fluid. In post-partum hemorrhage, he does not think that a stream of hot fluid will remove the clots within the uterine sinuses. A large mass of coagulum must, however, be removed in order that the uterus may contract properly. This intra-uterine douching for hemorrhage must be followed by an intra-uterine tampon of iodoform or sterile gauze. If in uterine hemorrhage it is thought that some placenta or membranes are retained, the douche-curette should be used. When sepsis and hemorrhage are present together, the use of an anesthetic is dangerous, and the uterus must be douched and cleansed as quickly as possible. This should be done with the douche-curette and the cavity of the uterus firmly packed with gauze. Prolonged douching should be avoided and the whole procedure performed as rapidly as possible. The writer does not believe in repeated intra-uterine douches, although in a few cases a second douche seems advisable.

Soluble Silver.—Although many local antiseptics are known, it is only since the various silver compounds were introduced that the general disinfection of the body became a possibility. A. Dworetzky (*Therap. Monatshft.*, March, 1900) reviews the evolution of silver-therapy and shows how the encouraging results obtained with metallic silver in contact with germ-life soon led to experimentation with the soluble salts, itrol and actol, the high bactericidal powers of which are now sufficiently established. On attempting to inject actol it was, however, noted that a

coagulation often occurred at the site of introduction, which materially interfered with absorption. Collargol, or colloid silver, the soluble, allotropic form of metallic silver, was found not to do this; in fact, it remained in solution more readily in albuminous fluids than in pure water, and salts and acids seem to have little effect on it. Applied in the form of a 15 per cent. ointment, to be rubbed into the skin, it has actually cured general acute or chronic sepsis, and locally for buboes, gonorrheal epididymitis and furunculosis, a retrogression of symptoms up to complete resolution has been obtained without surgical intervention.

External Urethrotomy.—R. Harrison (*Lancet*, March 17, 1900) considers external urethrotomy specially applicable to resilient, rapidly contractile strictures; to wounds of the urethra, either operative or accidental, where drainage is insufficient, since it is well known that clean, well-drained wounds give rise to less of the dense contractile tissue causing stricture; to stricture with urinary fistula and sinuses or with extravasation of urine; and to certain rare cases in which urethral manipulation is followed by acute symptoms of impending death, suppression of urine, rigors, etc. (i.e., acute sepsis). The points of importance in the operation are: The use of a guide; the performance of internal urethrotomy as an immediate preliminary to the external operation; and the provision of free urinary and wound drainage. External urethrotomy without a guide is a difficult, dangerous, incomplete operation, and usually unnecessary. If urine can pass the stricture there must be room for an instrument if it be small enough and properly guided. The utility of preliminary internal urethrotomy is evidenced by the ease with which the external operation is performed on the grooved staff. The internal urethrotomy is done by passing a filiform into the bladder and then cutting the stricture with a Maisonneuve urethrotome. The wound must be well drained and cleansed, for the character of the tissue, by which the stricture is repaired, is materially affected by the nature and duration of the drainage and irrigation that is employed. To this point too little attention is paid.

Mild Forms of La Grippe.—Influenza is characterized, says H. Huchard (*Bull. de l'Acad. de Méd. Paris*, March 5, 1900), by a tendency to visceral congestions, asthenia of the nervous system, and diminished arterial tension. Among the mild forms there are afebrile types without any inflammation, yet with such profound influence on the nervous functions as to cause much moral, physical and intellectual depression. Or there may be a slight pulmonary congestion, almost latent, without fever, perhaps with slight cough but no expectoration, and manifested on auscultation by a few subcrepitant or crepitant râles at one or both bases. There is also a febrile type of sudden access in which the temperature may reach 104° F. within twenty-four hours.

and as rapidly decline; the pulse remains at 60 to 80 and there is no appreciable organic lesion. As la grippe is one of the most powerful factors in lowering the resisting power of the body, these mild types should be recognized and the patient made to avoid contact with tuberculous or other sick people. The skin, liver, and kidneys must be kept active, the stomach and intestines being treated by alimentation rather than by drugs. The mouth and nose should be cleansed by a solution of formol, menthol, or carbolic acid. If the patient is confined to bed a milk diet is most suitable. The author considers quinine as almost a specific when used in large doses and he gives 15-25 grains of the hydrobromide of quinine a day for from one to three days, but no longer. This may be combined with an equal quantity of ext. ergot. If there is gastric intolerance the quinine may be given subcutaneously. Antipyrin is generally harmful, but may be given at the onset for headache, if combined with caffeine or black coffee. For the weakness of the nervous system use the glycerophosphates, or strychnine sulphate, gr. $\frac{1}{300}$, three times a day.

Tuberculosis of Stomach.—Based on an extensive pathologic experience, M. Simmonds (*Münch. med. Woch.*, March 6, 1900) concludes that gastric tuberculous ulcers are extremely rare. Although the gastric juice does not directly kill the bacilli, it renders the soil unfit for their propagation. Wherever there is achlorhydria, as in gastric cancer, the ulcers are not as rare as in otherwise normal organs. As a rule, they present small, single or multiple losses of tissue most commonly situated about the pylorus. Gastric symptoms were uniformly absent in all cases examined, thus rendering a diagnosis *intra vitam* impossible.

Pneumonia and Antipneumotoxin.—After citing some statistics as to the mortality of pneumonia, and giving a short résumé of some experiments in serum-therapy, Charles B. Canby (*Maryland Med. Jour.*, March, 1900) presents one case of pneumonia of his own and three others, in all of which antipneumotoxin was used successfully. His own patient was a youth, twenty years of age, who presented the physical signs of pneumonia with consolidation, and had a temperature of 105° F., with respirations 56 to the minute, and an uncountable pulse, at 6 P.M., when 12 c.c. of antipneumotoxin were injected. Three hours later his temperature had fallen two and one-half degrees, there was profuse perspiration, and his respirations were down to 40. The pulse was still uncountable. The next morning the temperature was 99° F., respiration 24, and pulse 96. Another 12 c.c. of antipneumotoxin were then given and from that time on his recovery was uninterrupted, and in twelve days from the last injection he was at work. In the second case reported there was a temperature of 103° F., pulse 110, rapid respiration, and the physical signs of pneumonia with consolidation. On the evening of the third day, in bed, the pa-

tient received an injection of 10 c.c. of antipneumotoxin, and the next morning he was in a profuse sweat, his temperature was 99° F., and his breathing and pulse were much improved. Four days later his temperature was normal and in eight days after the injection he was up and apparently well. The third case had pneumonia with consolidation, a temperature of 103° F., pulse 110, and respiration 80. She received an injection of 10 c.c. of antipneumotoxin in the morning. In the evening of the same day her temperature was 103° F., pulse 108, respiration 33, but on the next morning the temperature was normal, pulse 80, and respiration 20. For two days she was better and sat up in bed, but in the evening of the second day she had a chill, a temperature of 105° F., and respiration was 32. The next morning she was injected again with 10 c.c. of antipneumotoxin, her temperature being 104.2° F., pulse 113, respiration 32. In the evening there was only a slight change, but on the next morning her temperature was normal, pulse 70, and respiration 18. From this time on she progressed and in five days was well. The fourth case presented the symptoms of pneumonia, with a temperature of 103.8° F., pulse 140, respiration 42, at the time of an injection of 20 c.c. of antipneumotoxin. Six hours later his temperature was 103.6° F., pulse 102, respiration 28, and 20 c.c. more of the serum were injected. The next morning his temperature was 99° F., pulse 76, respiration 28, and the following morning his temperature was 98.4° F., pulse 70, respiration 23. From this time on his temperature remained normal and he progressed nicely.

Dysenteric Abscess of the Liver.—According to M. Kelsch and M. Nimier (*Bul. de l'Acad. de Méd.*, Paris, March 12, 1900) many cases are reported of the outbreak of liver abscesses in old dysenterics on their changing from a hot country to a temperate one during the cold season. Such abscesses are marked by their irregular course, their remissions and paroxysms, their chronicity, and their tendency to recurrence, these being the characters which distinguish the dysentery itself. The essential lesion both in liver and intestine is a necrosis. The abscess may appear first, but usually it accompanies or follows the dysentery, even appearing many years after the latter has been completely cured. The pus is yellow, bile-stained, or chocolate-colored, and is often so thick that it is missed by the exploring needle. It is mostly sterile, sometimes contains the colon bacillus, and very rarely the amoeba dysenterica; but the question still remains open as to whether these organisms cause or follow the primary lesion. The pus, even when apparently sterile, can produce other abscesses which in turn contain only sterile pus. When the abscess points upward it may readily be detected by the X-rays. The authors found that of nearly five hundred cases of abscess of the liver 85 per cent. were associated with dysentery.

Pyramidon.—W. Pauli (*Centralb. f. Therap.*,

March, 1900) lauds the antipyretic and antineuralgic properties of pyramidon and finds it the best substitute for the salicylates in acute rheumatism. It may cause profuse perspiration without collapse and never irritates the alimentary canal. It is only when the functions of the system are much disturbed that undesirable symptoms are seen; thus, one anemic patient experienced painful paresthesia, and a second, suffering from advanced mitral insufficiency and stenosis, developed a morbilliform eruption.

Open Treatment of Fresh Fractures.—C. L. Scudder (*Bost. Med. Surg. Jour.*, March 22, 1900) drawing his material from the cases of fracture in the Massachusetts General Hospital, which were examined from one to seven years after treatment, says that in adult life 69 per cent. and in old age 100 per cent. of the results by the ordinary methods of treatment were imperfect. He classes as imperfect results those cases in which there is deformity, persistent pain, tenderness, impaired function and inability to endure prolonged use. These poor results are due to incomplete reduction, and faulty immobilization. Often satisfactory reduction is impossible because of bone-fragments, interposed shreds of soft tissue, blood, the interference of muscular contractions, or the obliquity of fracture-surfaces. Often the conditions of a fracture are such that no form of apparatus can hold the fragments in proper alignment. Since these hindrances exist in nearly every fracture, and since the percentage of imperfect results by ordinary methods of treatment is so high, it would seem to be the part of sound surgery to cut down on fractures, remove blood-clot, get good apposition and fixation of fragments, and repair as far as possible the damage to soft parts. The fear of adopting this procedure is one of the legacies of preantiseptic days. At present there is less danger in an open than in a closed fracture.

Osteomalacia.—A. Littauer (*Therap. Monatshft.*, March, 1900) mentions among early symptoms of this disease muscular weakness, nervous irritability, paresis of the iliopsoas, contractions of the adductors and increased reflexes. Later, the bending of the bones, pains on locomotion, and the peculiar duck-gait render the diagnosis easier. The disorder has been found endemic in certain localities, and, while most prevalent during the sexual life of women, any age may suffer. Rheumatic influences, a purely vegetable diet, malnutrition, and severe general disease have been considered possible etiological factors in cases not connected with gestation. In the latter the symptoms generally improve during the puerperium, but yet there is no complete natural cure. Since castration has been introduced as a remedy, many ovaries have been examined for pathological changes, but nothing in addition to a hyalin degeneration of the vessels could be discerned. Theories as to causation are plentiful, but the one assuming some de-

ranged ovarian function to lie at the bottom of the disorder still finds greatest favor. Organotherapy has, however, proven useless except in one case reported cured after the administration of extract of bone-marrow. It is justifiable in all cases to try phosphorus before resorting to castration.

Treatment of Hydrocele.—In reviewing the treatment of hydrocele N. Cerri (*Cleveland Med. Gas.*, March, 1900) suggests the use of a method which was first introduced by Dr. Juathrociocchi. After evacuating the fluid, a piece of catgut about eight inches long is introduced through the canula. By mechanical irritation this excites an adhesive inflammation of the serous surfaces and in a few days it becomes absorbed. If the irritation is not sufficient the catgut may be soaked in a solution of perchloride of iron before introduction. The results are extraordinary; recovery being almost certain, and, furthermore, the patient is able to attend to his business while the treatment is being carried on.

Retroperitoneal Sarcomata.—J. D. Steele (*Am. Jour. Medical Sciences*, March, 1900) says that while retroperitoneal sarcomata are comparatively rare, they deserve more attention as to diagnosis than they receive. They occur more frequently in males, and in the first, fourth, fifth and sixth decades of life, i.e., later than sarcoma ordinarily occurs. Traumatism plays little part. It is a very rapid-growing tumor, the average duration being about nine months. It arises most frequently in the lumbar region. When lateral it is most frequently on the right side. It is usually lobulated and capsulated, hard and firm in its early stages, very prone to degeneration later, of a hemorrhagic, puriform or myxomatous type. In about a third of the cases it becomes cystic. Metastasis, while uncommon, is most apt to occur in the liver and lungs. The softened mass may rupture into the intestine or peritoneal cavity. The onset is insidious, the first symptom being usually functional digestive disturbances, and then pain and edema in the lower extremities due to pressure effects. Later there appear cachexia and symptoms due to pressure on the abdominal organs. At first the physical examination tells little. Later the colon is pushed forward and lies on the tumor's anterior surface. In lateral growths the small intestine is pushed to the opposite side, while median tumors are surrounded by an irregular circle of small intestine. This arrangement of bowel is very characteristic of all retroperitoneal growths. The tumor may fluctuate, and may move either with respiration or on palpation. Diagnosis, beyond determining the retroperitoneal and malignant character of the growth, is very difficult, especially the differentiation from tumors of the kidney or suprarenal body. Exploratory incision alone determines surely the position and character of tumor. Early surgical interference offers the only hope of cure.

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FUNCTIONAL AND ABORTIVE MYXEDEMA.

THE realization that certain special forms of constitutional disease do not always occur in their complete and typical forms, but that they may exist with such slight symptoms as to require careful observation for their detection, is one of the most interesting phases of advance in medical diagnosis during recent years. Mild forms of so-called exophthalmic goiter are, however, very frequently encountered, and the connection between these abortive types, presenting only slight tachycardia, some tremor and digestive disturbances, are now recognized as partaking of the nature of the severe types of the disease originally described by Basedow. Raynaud's disease, in its mild form, is, by no means, the rare malady that symmetrical gangrene has very happily always been. The suggestive relationship between all of the disturbances of peripheral circulation, from Weir Mitchell's disease, erythromelalgia, up to the complete cessation of blood-flow that causes gangrene, is now very generally recognized.

Recent observers, especially in France, have called attention to the fact that abortive forms of myxedema, analogous to the mild types of Raynaud's and Basedow's disease, are not infrequent. The patients are apt to be undersized and usually have attained, late in life, their growth

and development, their teeth and the use of their limbs; although they may have been apparently normal but delicate children. They early take on the appearance of being much older than they are. In the milder forms no true myxedema occurs, that is no mucinoid infiltration of the subcutaneous areolar tissue, but the mucous membranes are usually extremely liable to functional swelling and even to localized hypertrophy. The mucous membrane of the nose is easily affected by irritants, microbic or mechanical, or by unfavorable meteorological conditions. The tonsils are often hypertrophied and there is prone to be a ring of abnormally enlarged adenoid tissue in the pharynx. The teeth decay early and the hair falls out prematurely. The falling of the hair of the outer part of the eyebrow is said to be almost pathognomonic of this *myxedeme fruste*, or hypothyroidia, as the French writers call it.

Women who suffer from the affection are prone to have disturbances of the circulation of their mucous membranes at the time of menstruation. A tendency to hypersensitiveness of nose and throat and even of the vaginal mucous membrane has often been noted. Such patients frequently suffer from chronic constipation which seems to be due to the disturbance of the circulation of intestinal mucous membranes. Painful conditions of the joints are often noted and have usually been treated as rheumatism. The malnutrition, arthritic nerve-endings incident to the lack of certain products of the thyroid gland in the circulation, is supposed to be the cause. When hypothyroidia exists women endure very badly the strain of frequent childbearing or of prolonged lactation.

Where the symptoms noted are really due to a defect of the thyroid, even although it may be impossible to recognize that fact by palpation, the administration of extract of thyroid in small quantities brings relief, and restores normal metabolism. The recognition of the cause of these easily misjudged symptoms is, however, most important. Patients with tendencies to the development of symptoms because of defective thyroid secretion may be warned of their inability to withstand the serious crises of existence and be taught the limits of their capacity for the "strenuous life" that has become the passion of the day.

THE ART OF MEDICINE.

WHEN one considers by what a painfully slow process medicine has emerged from the Cimmerian

rian darkness of mysticism and empiricism, and wormed its tedious way into the borderland of exact science, there is little cause for wonder at the present trend of medical research toward the ultrascientific. We are ashamed—and pardonably so—of our long lineage of leeches and barber-surgeons, of Sangredos and Purgons, and are naturally enraged at being hampered in our progress by their modern counterparts—the motley throng of pseudoscientists, healers, osteopaths and other leg-pullers "*ad infinitum*"—who pululate in every nook and corner of the country. And yet, are we not in a measure to blame for the existence of these flourishing hordes, by exalting the science to the unspeakable detriment of the art of medicine?

In medicine we believe that the ancient aphorism about the exception proving the rule does not obtain. It follows, then, that mankind can not be dealt with medically from any hard and fast scientific standpoint. The constant surprises with which we daily meet in our observations of the varying reaction of different organisms to identical morbid agents, and the blank failures which so often attend attempts at infant feeding by the scientific modification of cow's milk, sufficiently attest the truth of this belief.

Consider how often Nature—with supreme indifference to the inductions of our subtlest logic based upon scientific research—plays havoc with our "*ex cathedra*" prognostications. That this fact was keenly appreciated by that prince of medical wits, Dr. Holmes, is evidenced by the following lines from his poem, "The Morning Visit"—a bit of medical wisdom that should jingle in the brain of every young M.D. who leaves our schools:

But Nature's graduate when she schools to please,
Wins back more sufferers with her voice and smile
Then all the trumpery in the druggist's pile.

Is it any wonder that that ineffably wretched victim of a bedeviled nervous system, the neurasthenic—a creature whose nervous energy is often at so low an ebb that he marvels at the existence of people with sufficient strength to walk about or even to maintain themselves erect—should turn with disappointment, rage even, from the offensively healthy and eupeptic doctor who assures him—with a fine scorn at his childish absurdities about his health—that he is "all right if he would only think so," and look for comfort and succor to the crafty quack who stands ready to cure his "heart disease" or his "paralysis?" We may sneer at such charlatany

and, from the lofty pinnacle of science, contend that the patient thus relieved of his infirmities is a gullible fool; but, for the most part, the physician has to deal with sick, and, therefore, miserably illogical—from our viewpoint—specimens of humanity, and not with scientists and profound reasoners.

To draw the line at charlatany in medicine is not so extremely easy as commonly supposed. The superiority of the educated doctor over the quack lies in his knowledge of morbid processes and in his diagnostic skill, but these very accomplishments must surely bring him to grief if, guided blindly by them, he neglects any means whatsoever to give his patient both hope and relief. The merest tyro in medicine soon learns—and without the aid of any profound psychological treatise—to recognize the immense influence of mind over matter, and he would be little short of an idiot if he did not incorporate into his therapeutic armamentarium that powerful agent, suggestion—the main tool of the charlatan.

There are so many factors of importance (not in the scientific treatises) for the successful treatment of the sick that lack of space does not permit the enumeration of all, but two seem so salient and, in a way, so amusing that they are worthy of note. These are the physician's personality and appearance. Imagine, if you can, a person with the sensibilities of a pachyderm attaining eminent success in the treatment of nervous invalids, or one with an incoercible acne rosacea in the rôle of a dermatologist "*qui est dans l' train*," as the French say.

We should never forget that Nature is kind even when she appears most cruel. Witness the subtle toxin she generates in the consumptive, which makes him hopeful to the very end. Surely hopefulness is the inalienable right of every sufferer, and we should strive most zealously to foster it by every canon of medical art rather than to shatter it by the inexorable arguments of science. Think what the world would have lost in the way of art and literature had certain of the masters, victims of incurable disease, not been buoyed up by the optimism of wise medical counselors and thus enabled to forget, in their work, the fatality of their maladies. The letters of that enchanter of two worlds, Robert Louis Stevenson, make goodly reading for medical men of pessimistic tendencies, in that they show what prodigies of both mental and physical labor were accomplished, and what a cheerful frame of

mind was preserved in the face of a disease which rendered its victim the frailest of the frail.

To sum up in a word the lesson we would teach, we should never allow ourselves to be so hampered by a purblind adherence to what we are pleased to call the hard facts of science that we neglect in the alleviation of the sick the simple, and often homely, measures suggested by art.

ECHOES AND NEWS.

NEW YORK.

Fire in Erie County Hospital.—A fire at midnight burned out the interior of the consumptive ward of the Erie County Hospital. Fortunately, all the sixty patients were carried from the building without injury.

Public School Baths.—Public School No. 1 of Manhattan Borough is to be provided with twenty-six needle baths, with hot and cold water. These will be open for the use of the boys of the school. The plan is to allow the boys, under the direction of the principal, to bathe in rotation by classes.

Smallpox at Columbia.—A law student of Columbia University, living in West One Hundred and Twenty-first street, was discovered last week to be suffering from smallpox. He was promptly removed to the hospital for contagious diseases, and four hundred of the students were vaccinated.

Smallpox at Quarantine.—The freighter "Pawnee" arrived in New York harbor on March 20th, from Mediterranean ports, by the way of Bermuda, with three cases of smallpox on board. She was quarantined and all her crew, save the three affected, were transferred to Hoffman Island for observation. These three were taken to North Brothers Island.

A Destitute Physician.—Dr. Charles Obermüller of 144 East Thirty-third street was taken to Bellevue Hospital, on March 23d, destitute and suffering from alcoholism. He was graduated from Bellevue in 1888 and afterward had charge of the Outdoor Poor Dispensary. Then he became a lecturer in the college and later was chief physician of the Pennsylvania Railroad. Three years ago he began to drink heavily.

Contagious Diseases.—For the week ending March 24, 1900: Measles, 828 cases, and 34 deaths; diphtheria, 265 cases and 46 deaths; laryngeal diphtheria (croup), 26 cases and 13 deaths; scarlet fever, 176 cases and 10 deaths; smallpox, 2 cases; chicken-pox, 26 cases; tuberculosis, 251 cases and 192 deaths; typhoid fever, 27 cases and 8 deaths; cerebrospinal meningitis, 8 deaths. Totals, 1601 cases and 311 deaths.

Doctor's Bespattered Overcoat.—Dr. Henry Spitzer secured in court a judgment for \$27

against a builder for damages sustained through the latter's workmen having spattered some mortar on his clothes while he was passing a building under construction. For an hour lost in cleaning his coat the doctor demanded fifteen dollars contingent damages. This was not allowed nor would his demand for \$40 be allowed, although the doctor declared his clothes were worth that sum.

Fruit Sale for Floating Hospital.—A few years ago a car-load of oranges was donated by some Californian fruit-growers to the "Los Angeles Home for Indigent Children." This fruit was sent to New York City for auction. Over two thousand dollars were realized. The Southern California Fruit Exchange of Los Angeles has recently donated a car-load of the best California navel oranges for the benefit of the sick children of the poor of New York, and has selected St. John's Guild as the medium through which the proceeds shall be expended.

Changes at St. Luke's Hospital.—On March 26th the Rev. Dr. George S. Baker, Superintendent of St. Luke's Hospital, was retired by the Board of Managers and appointed Pastor Emeritus, at a salary of \$2000 per year. Dr. Baker has served the hospital for nearly a quarter of a century. The resignation of Mrs. Quintard, who was the Directress of Nurses until she left for work in Cuba, a month ago, was accepted. It was rumored that there had been dissatisfaction with Mrs. Quintard's work as head nurse in that she showed favoritism toward the Canadian contingent among her nurses, but both Mr. Miller and Dr. Baker declared that all such rumors were without foundation. The hospital staff has been enlarged by the creating of a pathological internship. This member of the staff will be an assistant in pathology after the manner established by Dr. Thacher at the Presbyterian Hospital.

PHILADELPHIA.

Hospital Donations.—The proceeds of the annual Charity Ball have been awarded, each of the following institutions receiving \$3000: University of Pennsylvania Hospital, Jefferson College Hospital, Southeastern Dispensary for Women and Children, and the Women's Directory.

Quarantine Cards.—A Committee of the County Medical Society, consisting of Drs. Tyson, Meigs and S. Weir Mitchell, has presented to the Mayor a resolution of the Society asking that the present plan of posting cards on houses containing cases of contagious disease be modified or discontinued. People object to these signs and are led to deceive the authorities.

Hospital Fire.—An explosion near the Jefferson Hospital March 22nd broke all the windows in one end of the building and finally set fire to it. The patients were all removed to the College building and to other hospitals without mishap, the nurses and hospital staff exhibiting

admirable courage and discipline. The damage to the hospital was slight.

Mütter Lectures.—Dr. John B. Roberts of the Polyclinic Hospital will deliver the Mütter lectures on surgical pathology for the year 1900. The course consists of ten lectures, beginning March 27. The subject is "The Surgical Treatment of Congenital and Pathological Disfigurements of the Face."

Health Report.—Deaths for the week ending March 24th were 637, an increase of 57 over those of the previous week and an increase of 606 as compared with the corresponding week of last year. Contagious diseases: Diphtheria, 72 cases, 21 deaths; scarlet fever, 75 cases, 3 deaths; typhoid fever, 75 cases, 13 deaths.

College of Physicians.—At the meeting of the Section on Ophthalmology, March 20th, three cases of partial restoration of sight by operation after periods of blindness of respectively thirteen, thirty-three and sixty years were reported. Stress was laid upon the fact that operations to relieve traumatic blindness were most successful when the eye had reached a quiescent state.

Dr. Shoemaker stated that enophthalmos may be due to atrophy or paralysis of the cheek ligaments disturbing the balance of power. Tenon's capsule and the cheek ligaments are more involved in that condition than is Müller's muscle.

Dr. G. E. De Schweinitz filled a collapsed eyeball, caused by a refractory patient during a cataract extraction, with physiological salt solution, and obtained excellent results. The upper half of the iris had been torn from the margin and was lying in the bottom of the anterior chamber. This was brought up and when the eyeball was filled it appeared as in an ordinary cataract operation. At the end of seven weeks vision was twenty-fiftieths.

Pathological Society.—At the meeting of March 22nd Dr. J. A. Scott reported a case of hemorrhagic pancreatitis. The symptoms resembled those of acute intestinal obstruction and the patient died on the operating-table. There had been severe epigastric pain for three days, accompanied by vomiting, the pain finally being transferred to the left iliac fossa. There was no jaundice. Areas of fat-necrosis were found in the mesentery and omentum. Changes in the endothelium of the pancreatic vessels were found and many of them contained thrombi. Dr. Simon Flexner stated that the vessel changes consisted mainly of a proliferation of the endothelial cells, whether this was primary or secondary not being clear. The thrombi he considers as an accompaniment of the changes rather than as the cause, for the reason that they are found in the vessels of the dead area of the organ. The distribution of the areas of fat-necrosis in the omentum and mesentery along the line of the vessels corresponds to experimental cases which he has produced. This is also true of the areas of thrombosis.

Dr. J. F. Schamberg cited a case of tuberculosis of the skin of the hand from accidental inoculation. The patient was a laryngologist who had been treating two tuberculous cases.

CHICAGO.

Gift to Evanston Hospital.—Mrs. Herman D. Cable has made known her intention of presenting to the Evanston Hospital a gift of \$50,000 prior to her departure for Europe. Half of this amount is to be used in the erection of the Herman D. Cable Memorial Building, and the other \$25,000 is to be devoted to the maintenance of a children's ward therein, which will be known as the Anita Hutchins Cable Ward—a memorial to the donor's daughter. Mrs. Cable's munificent action has led to the formation of a plan by President Elliot and others interested in the Hospital for the establishment of a permanent endowment fund for the institution.

Smallpox Increasing.—Chief Clerk Pritchard of the Chicago Health Department has made a tabulated list of smallpox cases throughout the various States, which shows a large increase in the United States for the last week ended March 10th, of 1272. The figures for the week ending March 16th in thirty-six States and Territories show 3952 cases. The State showing the largest number of cases is Louisiana, with 2015 cases, and Texas comes next with 517. California is the State least affected, having but 3 cases. New York has 11 cases, as against 74 for Illinois. Five of these 74 have been discovered in Chicago.

Election of Officers.—At a meeting of the Board of Directors of the Chicago Eye, Ear, Nose and Throat College, recently held, Dr. A. G. Wipperm was elected Vice-President and Dr. Wm. L. Ballenger was reelected to the Chair of Otology, Laryngology and Rhinology.

Mary Thompson Hospital.—The annual meeting of the directors of the Mary Thompson Hospital for Women and Children was held March 20th. The annual report showed that 517 patients were admitted during the year, and the total receipts were \$20,744, leaving a balance of \$300. The sum of \$10,000, bequeathed by the late George M. Pullman, was formally accepted.

Chicago Drainage Canal Board.—The Engineering Committee of the Board has received a report on the examinations of Illinois River water, carried on in the interests of the Board. The report states: "The condition of the water at the mouth of the Illinois was almost normal with that of the general water supplies of the main tributaries of the Illinois River. The investigation so far shows clearly that there has been scarcely any pollution of water supplied to St. Louis at the intake."

Mortality Statistics.—Of the 547 deaths reported to the City Health Department last week, ending March 17th, 116 were due to pneumonia. The death-rate is 21 in excess of that of the pre-

ceding week, but the Department claims a gratifying decrease in mortality from the group of preventable diseases, particularly from diphtheria and scarlet fever. It is also shown that the excess in the total deaths is found among chronic invalids of advanced age, upon whom the remarkable March weather has had disastrous effects. As a result the number of deaths among those more than sixty years of age was higher last week than ever before recorded by the Department for a like period—44 of the total 547. The principal causes of death among these were the acute pulmonary affections, pneumonia, bronchitis, diseases of the heart and of the kidneys.

Medical Inspection of Schools.—Mr. W. Lester Bodine, Superintendent of Compulsory Education, has submitted his report to the Board of Education on medical inspection from February 19th to March 16th. The report shows there were 21,404 examinations during this period. As a result of them, 1213 pupils were excluded because of contagious diseases. The reports of the individual medical inspectors show that the number of cases of mumps has increased largely, while there are fewer scarlet fever and diphtheria cases. Since January 8th there have been 54,000 medical inspections, and 3444 pupils excluded. Mr. Bodine believes the great good which results from medical inspection is rapidly becoming apparent. Words of praise are heard on all sides for the Board of Education in establishing the medical inspection.

Appointments at Rush Medical College.—Dr. Henry B. Favill will be Professor of Therapeutics and Preventive Medicine. Dr. Daniel R. Brower, who formerly occupied the Chair of Materia Medica, Pharmacy and Therapeutics, and Dr. John M. Dodson, of the Chair of Physiology, will in the future have special departments connected with the Chair of Medicine, now under the direction of Dr. Frank Billings, jointly shared with Dr. James B. Herrick and Dr. Henry M. Lyman. Dr. J. Loeb of the University of Chicago will be the successor of Dr. Dodson as Professor of Physiology. It is said that much of the work of the junior class will in the future be done at the University of Chicago. Other changes in the Faculty are under consideration. Dr. Frank Billings has been selected Dean.

Intestinal Anastomosis.—At a meeting of the Chicago Gynecological Society, held March 21st, Dr. Alexander Hugh Ferguson showed a clamp and enterotome, a modification of Grant's enterotome, which he uses as an aid in suturing. The bowel clamps are applied to the bowel on either side of the field of operation for the purpose of preventing the escape of intestinal contents while operating. They are composed of two blades, one of which is fenestrated, and both are covered with rubber, so that the pressure does not come directly on the bowel between the blades, but on the rubber itself. This pressure is controlled by two screws, one at each end, which can be regulated to a certainty. The instrument is employed

in extra-intestinal methods of suturing in end-to-end, lateral, or end-to-side anastomosis, as an aid while doing the sewing. It is easily and rapidly applied; it minimizes the chances of soiling the peritoneum with intestinal contents; it holds the bowels firmly and securely together, so that the most accurate stitches can be quickly applied, thus greatly lessening the liability of leakage. It aids in completing the operation except the small hole through which the blades of the clamp entered; the stitches are inserted first, the intestinal walls cut afterward, and the pressure of the clamp on the blood-vessels of the mucous membrane for several minutes while sewing is being done lessens the tendency to hemorrhage. The new passage made between the bowels may be of any size necessary, thus preventing the possibility of stricture formation.

GENERAL

Dr. Osler Declines.—Professor Osler, who was being considered by the authorities of Edinburgh University with reference to appointment to the Chair of Medicine in that institution, says that he is not a candidate.

Gift to a Boston Hospital.—The Massachusetts General Hospital received, on March 24th, a gift of \$75,000 from an unnamed donor. A condition is that the same amount be raised in addition. The whole is to be used for a new out-patient department.

Smallpox at Yale.—Upon the occurrence of a case of smallpox at Yale University, Professor Hadley advised all the students to be vaccinated, saying: "This is the right remedy and the sure one; the wrong remedy is to run away. If you have not the disease in your system vaccination will make you safe."

Mortality in the Army in the Philippines.—The official records of the War Department show that from June 1, 1898, the date of the occupation of the Philippines, to February 17, 1900, the mortality has been 65 officers and 1460 men, a total of 1525. Of these 612 were due to casualties sustained in battle and the balance to disease.

Army Diet-Kitchens.—The death of Mrs. Anne Wittenmyer, who died recently at Saratoga, N. Y., recalls the fact that she was the practical organizer of the army diet-kitchens. It was while in the hospitals at Chattanooga in the winter of 1863-64 that she organized the system for supplying food for men whose condition was the most serious. The Government furnished the staple articles and the Christian Commission and Soldiers' Aid Societies provided the delicacies and the nurses to superintend the diet-kitchens in which the food was prepared.

Dr. Seaman's Prize.—Dr. Louis L. Seaman, late Major Surgeon First United States Volunteer Engineers, presented to the Military Science Institution some time ago \$100 in gold (or a medal

of that value, as the successful competitor might elect) for the best thesis on the subject of "The Ideal Ration for an Army in the Tropics." The papers were submitted to a board of award and on March 27th the prize was unanimously awarded to Captain E. L. Munson, Assistant Surgeon, United States Army.

Hospital Ship "Inquiry."—The recent report on the hospital ship "Missouri," made by Colonel Long, has not been satisfactory to Secretary Root, who has appointed a Board of Investigation, one of the three members of which is Major Surgeon Henry S. Kilbourne. The "Missouri" left New York several months ago after being completely fitted out as a hospital ship. She was in charge of Major Arthur, an army surgeon, and there was constant friction on the voyage between him and Captain Dillon, the ship's master.

London's Water Supply.—The Royal Commission on the Metropolitan Water Supply is now considering definite plans for the future water service of London. A constant supply of water, the Commissioners point out, is not at present given to all the houses in London; about 72,000 are supplied only intermittently. Regarding the amount of water which will be necessary in the future, provision is being made for the requirements reaching forward to the year 1941. The amount of water required per head is reckoned at 35 gallons per day, or a total of 425,000,000 gallons. The estimated population in 1941 is placed at 12,000,000 of people. Provision will also be made to supply water to the upper stories of the lofty buildings.

Appeal to Bird-Lovers.—The American Ornithologist Union appeals to every bird-lover to assist in protecting the breeding-places of sea birds. This country is on the verge of losing forever one of the main features of its seacoast charms—the sea-birds themselves. In fact, the terns, the most exquisite of the gull family, and which formerly thronged our whole coast, have been so nearly wiped out by agents of the milliners that this year's onslaught, already fully organized, will glean almost the last pair from the few small breeding-colonies which remain, wherever these are unprotected. And the larger gulls, which are not only very beautiful, but absolutely essential as harbor scavengers, are also being decimated for the same purpose. In addition to the esthetic considerations the protection of these birds as scavengers is an important consideration.

Divided Disciples.—We learn from the *Vegetarian Magazine* that the disciples of vegetable food are divided into two schools, between which the dividing line is the earth's surface. One school sanctions all vegetables, the other only such as grow above the surface of the earth, except asparagus, which grows partly above the earth, and which, we suppose, is too good to lose. This latter school forbids the potato because it is too earthy. The following argument by a "woman physician" covering this vegetable is

considered conclusive: "Never yet have I known a man or woman whose diet showed a preference for potatoes and other underground starch products who didn't likewise show a heaviness of mind and body. He steps weightily, he thinks slowly, his speech is halting, if not most of the time punctuated by a full stop. I know of no intellectual handicap like potatoes. On the other hand, I can always spot him who lives chiefly upon the succulent above-ground plants. Like them he is light, airy, quick in all his motions, ready with his tongue and never found wanting in his thoughts."

CORRESPONDENCE.

NAUHEIM AS A SUPPLEMENT TO CARLSBAD.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—Allow me the privilege of your columns to take exception to a statement made by Dr. Manges in his contribution to the discussion on diseases of the heart before the New York Academy of Medicine, published in your issue of March 10th. The statement referred to and the sentence after it are as follows: "From Carlsbad the physicians are now accustomed to send patients who have taken the reduction cure to Nauheim for after-treatment. It is no wonder that this is so, for rapid loss of flesh always means loss of tone in all muscles, especially the heart muscle." The statement contained in the first sentence, involving, at it does, a rigorous regimen and treatment as indicated in the sentence following, should, to have the weight it deserves, if true, and apparently intended, be substantiated by the quotation of statistics, or, at least, of a sufficient number of cases to make it of practical value. The feasibility of collecting such statistics appears when we consider the thousands of visitors who frequent both health resorts referred to and the number of capable and reliable medical men there resident. Having spent four weeks in Nauheim last summer, I venture to give the result of such information on this matter as I was enabled to gather.

Being at the time practically at leisure, I made it my business to inform myself as thoroughly as circumstances would allow regarding Nauheim methods of treatment and the frequenters of its baths. Of course, my attention was not specifically directed toward learning how many visitors came or were sent from Carlsbad, after taking the cure there. Now, considering that during the Carlsbad season, extending from the middle of June to the middle of August, it harbors over 20,000 visitors, and Nauheim from the middle of May to the end of September over 10,000 visitors, a fair percentage of both classes being Americans, it is significant, although I repeat my inquiries were not specifically directed to the subject, that I was never informed that Nauheim physicians were wont to have Carlsbad patients referred to them or that Carlsbad patients, after completing their cure, were wont to resort to Nauheim on

account of impairment of heart function. If a migration from Carlsbad to Nauheim had become "customary," would it not be current knowledge, obtainable without specific inquiry?

My chief reason for challenging Dr. Manges' quoted statement is that it reflects, evidently without intention, unfavorably on our Continental colleagues. It implies an indifference to their patients' greatest good, entirely inconsonant with their well-known unselfish conscientiousness. It is rendered improbable when we consider how persons select their respective baths. About to visit a "Kurort," the patient consults his family physician or an authority of his native or the nearest university town, as to the appropriate one. He is subjected to careful examination and receives his directions. Arrived at the "Kurort," the patient places himself under the care of a "Badearzt," who supervises his "cure." By him he is again subjected to examination. The cure at Carlsbad is known to the laity even to be a trying one, from which individuals with weak constitutions are barred. Is a physician, then, likely to ignore this fact in the case of a patient with a weak heart? Is the "Badearzt" likely to allow a person to undergo a reduction cure whom he finds suffering from symptoms (not difficult to recognize) of an incompetent heart? The professed object of the cure being to add tonicity to the heart-muscle while superfluous fat is gotten rid of, no patient would be allowed to take the cure in such a manner as to weaken that organ.

But supposing, for argument's sake that the heart-muscle has been weakened. The "Badearzt," in recommending a resort for after-cure, would more probably place his patient under the invigorating influence of a "Luftkurort," as, in fact, I am informed, is generally done, than to subject him to the further initial depressing effect of the Nauheim cure and climate. For physicians at Nauheim, generally, admit that the primary effect of the baths are depressing, and, in consequence, insist on having trained and experienced attendants accompany their patients during the first few baths. Evidently Dr. Manges has reference to this primary depressing effect when he states further on in his paper: "Such . . . serious disturbance of a compensation which might otherwise have kept the patient in reasonably good condition for years, . . . has even occurred at Nauheim itself and patients have been worse on their return from a voyage that they hoped would be a source of the greatest good."

Charles Schram, M.D.

1074 Madison Avenue. New York,
March 14, 1900.

Insanity Expert Insane.—Dr. Richard S. Dewey, who was formerly head of the Kankakee Insane Asylum and recently in charge of a sanatorium at Wauwatosa, Wis., is insane and under restraint. Dr. Dewey originated the cottage system, under which insane patients were divided into different classes.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, March 17, 1900.

ALLEGED DEFECTS IN HOSPITAL SERVICE AT THE CAPE—WOUNDS NOT DRESSED FOR THREE DAYS—OFFICIAL UNWILLINGNESS TO USE VOLUNTEER NURSES—GENEROUS RESPONSE OF NURSES AND DOCTORS AT LADYSMITH—AN ASTONISHINGLY "TRAVELED" BULLET—REGRETS AT THE RETURN OF SIR WILLIAM MAC CORMAC AND MR. TREVES—ROYALTY AND REFORM—THE PHOSPHORUS COMMISSION.

Two of the colonial newspapers, one at Cape Town and one at Pietermaritzburg, have made charges of negligence and inadequate equipment against one or more of the base-hospitals at these two places. The charges are very similar in both cases, that wounds are left undressed for days, that nurses are too few, and that there are both shortage and red-tape difficulties in the availability of hospital-supplies. That there is nothing vitally serious in the charges is easily seen by their investigation and almost complete refutation in person by Sir William MacCormac and Sir William Stokes respectively, but that there was a slender basis for them of a curiously mixed character seems to be more than half admitted. The shortage in the Army Medical Corps, so striking in the case of the medical officers, extends to the rank and file, and medical correspondents frankly state that at the Cape Town Hospital the staff of attendants is seriously overworked, and that certain wards are in consequence practically without attendance after 5 P.M., in spite of the fact that the attendants average only three nights in bed each week. And yet the Department is said to be refusing the services of scores of volunteer nurses, both trained and untrained, on the ground that it can not provide proper accommodations for them, and also, apparently, for fear that their presence in a military hospital will in some way imperil the preservation of that sacred fetish of officialdom, discipline. What happens when the military authorities abandon this attitude of aloofness from volunteer assistance has been well shown at Ladysmith, when, upon the raising of the siege, a single telegram from the principal medical officer, asking civilian physicians and nurses in Durban and Pietermaritzburg to volunteer for immediate service there to relieve the fearfully overworked staff, was responded to at once by nearly double the number of offers of service that could be made use of.

Part, however, of the charges against the hospitals made by *The Times of Natal* appears curiously enough, to be based upon a misunderstanding of modern methods of wound-treatment. Because a wound has not been dressed for three, four or five days, even although it be dry and free from either discharge or pain, or "covered by a patch of dried and clotted blood," the pitying reporter is sure there is shameful neglect.

somewhere and rushes into print accordingly, not realizing that the perfection of aseptic wound-treatment lies in the extent to which it can let well enough alone and not interfere with the first dressing, even although this has been applied in the field, so long as the wound is doing well under it.

An extraordinary case of "traveled" bullet is just reported from Northampton as one of the casualties of the last Transvaal war: A trooper was wounded at Majuba Hill, in the upper part of the chest near the shoulder, and, as the bullet could not be located, it was left in the tissues. A few days ago the man noticed a lump in his thigh and on seeking advice the bullet could be plainly felt and was accordingly taken out just below the hip-joint. This, if correctly reported, must be added to the "echoes of Majuba Hill" of which we have heard so much.

The nearly simultaneous return of both Mr. Treves and Sir William MacCormac from South Africa is causing general regretful comment, as it robs the consultant staff at the front of by far its two most distinguished members. Especially is this regret felt in Sir William MacCormac's case, as it is feared that the fatigues of active campaigning have proved too much for his strength at his comparatively advanced time of life, and that he is returning largely upon that account. Mr. Treves' health has also suffered from attacks of the prevailing dysentery, but he is reported as practically recovered, and his return seems to be due to important engagements which were announced some time ago as necessitating his return in March. At all events, both these gentlemen can have the satisfaction of feeling that they have borne the brunt of the heaviest work and organizing of the medical part of the campaign, and that probably the result now is only a question of time and a comparatively short time at that.

The advantages of royalty as a figurehead in various reforms was strikingly shown last week in the admirable speech of the Prince of Wales at the opening of the splendid model buildings and dwellings, built by the London County Council in one of the worst slums of the East End—Boundary Road. His Royal Highness' presidency of the Association for the Prevention of Consumption and of the Hospital Fund which bears his name may possibly be set down as matters of form and the duties of his high position, but in this instance his presence was due to a genuine personal interest in and practical experience with the problems involved. Not only has he been an active member of at least one Royal Commission on Housing, but he was one of the earliest shareholders in the schemes for the erection of model dwellings which have borne such magnificent fruit in London of late years, and he has built model cottages for the farm-laborers upon his estate at Sandringham. So that his cordial endorsement of the vigorous action of the County Council in these directions comes with double force and is expected to much stimulate

both Parliament and the Government to drastically improve upon the very imperfect bill already commented upon, which is now before them. He especially urges the necessity of having the responsibility for the insanitary condition of dwellings brought home definitely to some one person or party who may then be dealt with accordingly, as under the present complicated condition of English property tenures it is often impossible to find out who is responsible for a given building. The Prince himself has had practical experience with the difficulty in his determined attempts to reform the condition of his own property in Lambert, which he has so far found impossible on account of the long leases and complicated system of subletting which prevent his fixing the blame definitely upon any one or even calling them to account if he could do so. To this end he advocates compulsory registration of owners of all such properties and far less generous treatment of them in condemnation and clearance schemes, the present enormous expense of which actually puts money in the pockets of the guilty parties.

The Government Commission upon the Prevention of Phosphorus Neurosis is making excellent progress during its present session and sustaining the excellent regulations proposed by the Home Office as to mutilation, cleanliness, and the regular supervision of the work-people by competent dental experts against the protests of the manufacturers. Many of the latter, it is also gratifying to note, are announcing the accomplished or prospective adoption of processes which will do away with the use of yellow phosphorus altogether in the greater part of the work, but, unfortunately, they are making these amendments the ground of an opposition to the new regulations as being superfluous. We fear that under the circumstances their "improved processes" must be looked upon with suspicion for the present.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

RESPIRATORY JACKET FOR EMPYEMA—UNUSUAL SYMPTOMS OF RHEUMATISM IN A CHILD—HEMOTHORAX OF UNEXPLAINED ORIGIN—SUCCESSFUL SUTURE OF DUODENAL ULCER—STRICTURE OF THE SMALL INTESTINE FOLLOWING STRANGULATED HERNIA—PATHOLOGY AND TREATMENT OF PNEUMONIA—PARASITE OF CANCER—OPERATIONS FOR GASTRIC CARCINOMA—HAVE NERVOUS DISEASES INCREASED?—THE REAL POSITION OF THE STOMACH.

At the Medical Society of London, February 12th, EWART exhibited an automatic respiratory jacket for applying continuous pressure to the chest in cases of empyema. It was intended to be worn night and day. A boy who had worn such a jacket for six weeks was also showed. His symptoms had improved and his chest measurements had decreased.

E. H. WILLOCK showed an apparatus for the same purpose, which was not to be worn all the time, but could be used to obtain pressure intermittently. The patient so treated expectorates more freely for a day or so, and then the expectoration is decreased and the symptoms improve.

W. J. HADLEY exhibited two little girls, aged eight and nine years, who presented unusual symptoms of rheumatism. The first had had three attacks of ordinary polyarticular rheumatism, and later an attack causing lasting deformity and stiffness of most of the joints, due, according to the skiagrams taken, to soft tissues, the bones showing little variation from the normal. This was, therefore, a typical case of rheumatic arthritis occurring in a child. Antirheumatic remedies had proved useless but the joints improved somewhat under the influence of daily massage and sweating. The other child gave a history of chorea, although not of arthritis. After some days of irregular pyrexia, a presystolic mitral murmur and a systolic aortic murmur made their appearance. Later the occurrence of sudden pain in the left arm, with tenderness and other symptoms, made it almost certain that an embolus had passed into the brachial artery. The radial artery became pulseless.

At the Clinical Society of London, February 9th, H. D. ROLLESTON spoke of a fatal case of hemopneumothorax of unexplained origin. A man, aged twenty-one years, in apparently good health, was seized with an attack of abdominal pain and diarrhea lasting two days. There was then agonizing pain in the right hypochondrium, radiating to the umbilicus and right shoulder. The next day his right chest was tapped and air and blood came out. In a week he died, and the right pleural cavity was found to contain 60 ounces of blood, but no air. The necropsy was performed in the most careful manner, but no evidence of tubercle, pleurisy, hemophilia, scurvy, hepatic cirrhosis, aneurism, or traumatism could be detected. In fact, the cause of the hemorrhage and air could not be found.

N. PITT narrated an obscure instance of hemopneumothorax in which, perhaps, an emphysematous bulla had ruptured.

H. FOX told of a man, aged forty-four years, in robust health to all appearances, who was suddenly taken with pyrexia, pains in the chest and signs of pleuritic effusion. He was twice tapped and blood and air withdrawn. The patient was sent away for a voyage, and completely recovered and has remained well ever since. It was noteworthy that three other men employed in the same office broke down with tubercular disease of the lungs.

J. J. PERKINS and C. S. WALLACE reported a case of successful suture of a duodenal ulcer which had perforated into the abdominal cavity. It is rare that operation under such conditions has been followed by recovery, and, curiously enough, it is still rarer that the diagnosis has been made before the abdominal cavity has been opened. Their patient was a man, aged fifty-

two years, who after three days of epigastric discomfort was seized with sudden intense pain without vomiting. The correct diagnosis was made, the abdomen was opened through the right rectus muscle, and the duodenal perforation closed by two sutures in two rows. There was little fluid in the abdominal cavity, but the intestines were turned out and irrigated. A slight gauze drain to the site of perforation was left in the abdomen.

A. BARKER protested against the evisceration and irrigation which had been employed. He considered it far safer to wipe out the fluid as well as possible and to leave the rest to the absorptive power of the peritoneum. Even when extravasation is widely diffused, it is possible to clear out both flanks and other parts of the peritoneum by strips of antiseptic gauze.

J. C. SYMONDS agreed that evisceration adds to the risk of an operation. Not to flush out the abdomen in any case is perhaps going to the opposite extreme. Probably flushing and mopping out with gauze without removing the intestines is the safest procedure.

T. H. KELLOCK reported a death from stricture of the small intestine following strangulated hernia. At operation the intestine was in such good condition that it was replaced in the abdominal cavity. For three months the patient suffered at times from pain and constipation, and then the symptoms became so severe that the abdomen was opened. The loop of intestine which had been caught in the hernial sac was constricted and adherent to the omentum. The omentum was separated from it, and a lateral anastomosis was made between the afferent and efferent parts of the loop. The patient died, not because of any failure of the anastomosis, but because the loop of intestine went on to gangrene and set up a fatal peritonitis. Apparently, the mesentery of the bowel had been severely affected at the time of the strangulation of the hernia, and after its return to the abdominal cavity the nourishment of the bowel had taken place through the omental adhesions. When these were divided gangrene followed.

At the Liverpool Medical Institution, January 25th, N. RAW read a paper on the pathology and treatment of pneumonia, based on an observation of 1047 cases during a period of twelve years. The general death-rate of the whole series was 23.4 per cent. During the past three years 317 cases of pneumonia were admitted into the Mill-road Infirmary and the death-rate was 34 per cent. Some of the patients were moribund when admitted. There seems to be no reason to doubt that the disease is due to a specific micro-organism, the diplococcus of Fraenkel, influenced by changes in temperature, and a lower power of resistance in the individual. After reviewing the various forms of treatment employed in the past and at present, the speaker gave it as his opinion that no specific form of treatment influences the progress of the disease or in any way cuts it short. He believes that the treatment

of the future will be antitoxic, the serum being obtained from convalescent patients or from immune animals.

W. CARTER said that on clinical grounds one must recognize two different forms of pneumonia, (1) simple and tending to recovery, and (2) septic and very dangerous. The intensity of the disease varies in different years, having been greater in 1881 under the influence of the small-pox epidemic, and at the present time under the influence of the epidemic of influenza. He mentioned one condition in which opium is of benefit, namely, after a drop in temperature of 6° or 8°, with the onset of active delirium. The induction of quiet sleep will do much good. At all other times opium is harmful.

February 8th, the discussion was continued. C. J. MACALISTER, referring to the serum treatment of pneumonia, thought that the argument that the crisis resulted from the production of antitoxin, and that immediate relapse was thereby rendered unlikely, was not maintained in the case of bronchopneumonia, for fresh patches of pneumonia succeed one another, and in croupous pneumonia one attack seems to predispose to another.

J. HAY referred to the influence of the alcoholic habit upon recovery, saying that out of 100 cases which he had watched, two-thirds of the patients who died were alcoholics. He considered valvular cardiac disease to be of less importance in an attack of pneumonia than a degenerate myocardium.

A. E. DAVIS thought that with careful nursing and treatment, the mortality in pneumonia should not be over 10 per cent. He advocated treatment by carbonate of ammonium and brandy, and thought opium and other narcotics harmful.

In closing the discussion RAW said that he had included all forms of pneumonia in his statistics. The death-rate of genuine lobar pneumonia is probably about 12 per cent. Carbonate of ammonia is a most useful expectorant and stimulant, and a combination of chloral and digitalis is helpful and soothing. Strychnine is the most valuable heart stimulant. Oxygen is of little value. Many patients require no alcohol, while others need it and are greatly helped by it.

At the meeting of February 15th, K. MONT-SARRAT read a paper on the parasite of cancer, stating that he had isolated organisms from a carcinoma which he had succeeded in growing upon various nutrient media. Inoculations from these cultures made into the peritoneal cavity of guinea-pigs had been followed by carcinoma of the peritoneum and of various internal organs. In these growths parasitic organisms were found in abundance and were again cultivated. While not claiming that the parasitic theory was proved, the reader of the paper said that it afforded a good working hypothesis. He explained the similarity of primary and secondary growths by supposing that the cells of the parent tumor migrated, carrying with them the parasites, and in this manner the structure of the secondary

growth was determined. These parasites appear in a variety of forms, according to the circumstances, but morphologically they seem to be identical with the "cancer-bodies" already described.

At the meeting of February 22d, R. PARKER spoke of some recent operations upon the stomach for malignant disease. Gastrostomy by Frank's method was four times performed. Two patients died in six months of phthisis, one in a week from bronchitis, and one in three months from syncope. He considered gastrostomy the least satisfactory of temporary operations upon the stomach. Four gastro-enterostomies were performed with success. Two of the patients were holding their own, and two were growing worse from extension of the disease. No appliances were used, but two rows of sutures were inserted, one through the mucous membrane and one through the peritoneum. Excision was twice performed. One patient, whose tumor was shown microscopically to be a carcinoma, was apparently well two years after operation, and the other patient was well a year after operation; but the microscopical examination of the tumor in the latter instance showed it to be a gumma.

F. T. PAUL thought that there is danger of the escape of intestinal contents into the stomach after gastro-enterostomy, especially if the opening is made posteriorly. He considered the operation inferior to pyloroplasty as a means of temporary relief.

At the Edinburgh Medico-Chirurgical Society, February 7th, W. W. IRELAND took up the question of the increase of diseases of the nervous system which, according to Professor Erb, has been going on for the last thirty years. He considered that the strain of life to-day falls most heavily on the middle classes. But there are many compensations in the way of more secure existence, more frequent amusement, less drunkenness, etc. Ireland had addressed many letters to physicians to learn whether nervous diseases have been on the increase. Most of the physicians replied that they saw no evidence of such increase. A few, from the large towns, thought there had been an increase in the lighter forms of nervous trouble, such as neurasthenia. Monotonous work demanding severe and unremitting attention, such as telegraphy or checking mechanical labor, is most trying to the nerves, and nervous and mental breakdowns are relatively common among persons who pursue such occupations.

At the Royal Academy of Medicine in Ireland, February 2d, BIRMINGHAM discussed the form, position, and relations of the stomach as he had found them in bodies hardened by the intravascular injection of formalin. The empty stomach is contracted, not collapsed, and its pyloric portion resembles thick-walled intestine. Its cardiac portion is rounded and attenuated, and its long axis is nearly horizontal. The transverse colon is doubled up over the empty stomach, and lies between it and the diaphragm. In the

first stage of dilatation, the fundus and cardiac portions are expanded, while the pyloric portion remains contracted; and the lesser curve is bent sharply, as in the empty state. In the second stage of dilatation, the pyloric portion opens out, but the distinction between it and the cardiac portion is still well marked. In the third stage of dilatation, this distinction is nearly obliterated. All the axes of the stomach are then enlarged, and the pylorus is carried an inch or two to the left of the median line. There is no rotation around the long axis with raising up of the greater curvature, as is usually described. The distended stomach lies obliquely, its long axis not vertical, as has been taught in recent times, but making an angle of 40° to 45° .

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE

Stated Meeting, Held Thursday, March 1, 1900.

The President, William H. Thomson, M.D., in the Chair.

The subject of the evening was the continuation of the discussion of cancer.

Cancer of the Larynx.—Dr. D. Bryson Delavan said that cancer of the larynx is very rare. Its most frequent form is epithelioma. The most important consideration with regard to the affection is its early and certain diagnosis and radical removal. The operation for radical removal of cancer of the larynx is undertaken by but few. The diagnosis of the condition is demanded of many physicians, and even the general practitioner should be familiar with the symptoms which raise a suspicion of beginning laryngeal carcinoma, so that the very important early stage, when radical removal is comparatively easy, may not be passed over. It must be confessed that very little progress has been made in this subject of cancer of the larynx during the last twenty-five years, except as regards surgical procedures. J. Solis Cohen's suggestion regarding the removal of the whole larynx and the attachment of the trachea to the cervical wound is the most important contribution to the treatment of laryngeal carcinoma during recent years. Early recognition of laryngeal carcinoma is one of the most difficult problems in diagnosis. It is extremely important because the neglect of it costs life. At first there is hoarseness. This may last for months, seemingly without cause. In people over forty, continued hoarseness for which no cause can be found should give rise to suspicion. The first sign on the vocal chords is usually an infiltration, small in amount; then a swelling is noted, sometimes diffuse, sometimes papillomatous in character. Finally, there occur two signs that are more or less pathognomonic, these are sudden lancinating pains and loss of motion on the affected side. The pain is very different from that of ordinary sore

throat, as patients will usually tell their physician of their own accord, or at least, will do so if questioned about the matter. The loss of motion is due to infiltration of the muscles attached to the arytenoid cartilages. This loss of motion may simulate paralysis or ankylosis of the joints of the arytenoid cartilages. When the infiltration and swelling of the vocal chords is noticed, two things require to be differentiated, tuberculosis and syphilis. Tuberculosis can be excluded by a careful consideration of the history of the patient, by an examination of the lungs, and by the investigation of the sputum for tubercle bacilli. Syphilis may be excluded by the history and, especially, by the therapeutic test of yielding promptly to antisyphilitic treatment. Two to three weeks of treatment suffices to make the decision. Where doubt remains as to the character of the tumor a part of it may be removed and examined under the microscope. As is easy to understand, this may often be misleading. A notable example is that of the late Emperor of Germany. So great a pathologist as Virchow himself examined the portion of tissue that had been removed from the Emperor's throat, yet he failed to find epitheliomatous appearances. The reason for this is obvious. The portion removed may easily be only normal mucous membrane from above the tumor, or it may be laryngeal tissue distorted by the neoplasm but not yet infiltrated with epitheliomatous cells. There are two objections to the removal of a portion of a growth for microscopic examination. The first is that a serious injury of the larynx ensues from the removal of the tissue, and, secondly, irritation tends to accelerate the growth of the neoplasm and this seems to be especially liable to happen in carcinoma of the larynx.

Exploratory Thyrotomy.—Where there is long-continued hoarseness without cause and severe lancinating pain and loss of motion in one or both chords, grave suspicion should be entertained of the presence of malignant neoplasm. If, in addition to these signs, a tumor is found suspicion becomes almost assurance. There is no doubt that in these cases Butlin's advice seems completely justified. When such a tumor is present it should not be allowed to increase too much in size before surgical measures are taken, and an exploratory thyrotomy should be advised. The operation is not dangerous and makes the diagnosis absolute. The improvement in the technic of operations for removal of portions of the larynx of late years has made the results very encouraging. One-fourth of a larynx can be removed without seriously inconveniencing the patient for after life. A patient from whom three-fourths of the larynx was removed three years ago by Dr. Curtis is now able to talk reasonably well and seems only to be suffering from hoarseness. He has been able to resume his occupation and considers himself to be in excellent condition.

In discussion, Dr. B. Farquhar Curtis said that he performed the operation on Dr. Delavan's patient some three years ago. After the removal

of the larynx he packed the cavity for twenty-four hours, then removed the packing and allowed the patient to take food, his head being held over the end of the bed while he swallowed in order that no food might be aspirated into the lungs. The wound healed very nicely, but the formation of the false vocal cords after the operation took a longer time than usual. There was a certain redundancy of mucous tissue which formed folds, thus causing symptoms of stenosis. About a year and a half after the primary operation, a secondary minor operation was done which relieved this stenotic condition, and at the present time the new vocal chords function very well. The patient talks as if he were very hoarse, but is able to carry on his ordinary avocations and to make himself perfectly understood. He is, in fact, in no worse condition than a man with a bad cold.

Cancer of the Stomach.—Dr. B. Farquhar Curtis said that while cancer of the larynx is very rare, cancer of the stomach is very frequent. It represents over twenty per cent. of all the cancers that occur. In men over one-third of the cancers are gastric, in women only 13 per cent. Of late the mortality of operations for gastric cancer has grown constantly less and less. Professor Woelffler of Prague has collected the statistics of 173 cases of gastric cancer operated on by the best German surgeons. The mortality was 31 per cent. This is for operations done during the last ten years. Twenty years ago the mortality was as high as 60 to 80 per cent. Some operators have at present as low a mortality as 25 per cent. Many of the cases were radically cured. Three of them were alive at the end of four years, four at the end of five, one at the end of six years, one at the end of seven years, and three at the end of eight years. This set of statistics constitutes a good proof that in selected cases operation is a radical cure for cancer of the stomach. Early diagnosis is indispensable for successful radical operation. Patients may be divided into those who have a tumor and those without a tumor. Patients with a very large tumor used to be considered inoperable. This is no longer the case. A patient from whom a very large tumor was removed by Dr. Curtis is still alive at the end of two years. If the tumor is freely movable the prognosis is better, but an immovable tumor may be operated on successfully if it is only bound down by inflammatory adhesions which can be readily broken up. Cancer of the stomach is usually in the pyloric region. It must not be forgotten, however, that the mesenteric attachment of the pylorus may become very much stretched and the tumor displaced. It may even be found in the cecal region. When a tumor is found, gall-stones should be carefully excluded, as they may easily produce a hard, nodular feeling that simulates cancer.

Diagnosis without Tumor.—The majority of cases of cancer of the stomach come to the physician at a time when no tumor can be felt, the reason being that the tumor is hidden either behind

the liver or beneath the ribs, or is very small and escapes palpation. The suspicious symptoms of cancer then will be vomiting, hematemesis and pain. These symptoms are not, however, at all pathognomonic. Benignant stenosis of the pylorus and ulcer of the stomach may cause them quite as well as cancer. Other symptoms, then, must be looked for to make the suspicion of malignancy sufficient to justify diagnosis. Dilatation of the stomach is not common with malignant disease. Stricture of the pylorus develops but the stomach has usually not been in a sufficiently healthy condition for dilatation to have taken place above a cancerous stricture. The presence of a dilated stomach, then, is presumptive evidence of a benign process. There are exceptions to this rule, but it will usually be found that the cancer in the cases where dilatation has developed arose on the site of an ulcer which had previously caused some stricture of the pylorus.

Chemical Diagnosis.—This is our most valuable auxiliary in cancerous affections of the stomach. The most important element in this method of diagnosis is the presence or absence of hydrochloric acid. The absence of hydrochloric acid strongly confirms the suspicion of the presence of a cancer. In a recent series of over 105 cases in Italy, hydrochloric acid was absent in over 80 per cent. of the cases. Other investigators declare that it is absent in 90 per cent. of cancerous involvements of the stomach. Lactic acid was claimed by Boas to be pathognomonic of cancer. His conclusion in this matter has not been confirmed by the observations of others and, moreover, the presence of lactic acid is not an early symptom and so is not helpful for a diagnosis at the stage when it is most needed.

Digestion of Albumen.—This constitutes one of the most important diagnostic signs of cancer of the stomach. Cancer leads to an atrophy of the gastric glands and this causes a delay in the digestion of albumen or a complete loss of the faculty. Hemmeter says, however, that where only small tumors exist, not enough of the stomach glands are affected to cause any notable diminution in gastric secretion and consequently not in albuminous digestion. There is often great motor insufficiency of the stomach. This occurs even when there is no stenosis of the pylorus, the cancerous tumor being on the anterior or posterior walls. The presence of the tumor seems to interfere with normal peristalsis in these cases. Benign stenosis of the pylorus is accompanied by an increase of hydrochloric acid. Symptoms of stenosis, then, where no hydrochloric acid is present, point in at least 75 per cent. of the cases to the existence of cancer. It is often said that portions of the growth may be obtained for microscopic examination. Theoretically this is a most certain way of making the diagnosis, but it is extremely difficult to secure satisfactory specimens. There is a bacillus described by Oppler and Boas which is said to occur constantly in the stomach when cancer is present. Its discovery is at least confirmatory of other signs.

Practical Rules.—If a tumor of the stomach is discovered operation should be advised if there are any other suspicious circumstances. Either a cancer will be found, or sometimes the thickened base of an ulcer. In either case the condition may be relieved by operation. If symptoms of stenosis are present, a laparotomy should be done in order either to remove the cause by radical operation or a gastro-enterostomy to relieve symptoms. If dilatation of the stomach exists, operate, for the gastropexia can also be relieved. If the patient has lost a good deal of weight from no obvious cause, if there is a decrease of hydrochloric acid and lactic acid present, an exploratory laparotomy is certainly justified. If blood is frequently vomited an operation should be done. Frequently recurrent pain of an intense character justifies operation. There is danger in operating for pain alone, since this may prove to be due to a neurosis of the stomach. Even a neurosis, however, has been known to be cured by laparotomy and in two cases operated on recently by Dr. Curtis himself, although nothing was found that might be considered causative of the pain except a highly neurotic condition of the stomach, both were relieved by the operation. If there should prove to be no cancer, not only will the operation do no harm but it will almost surely do good. Surgeons have come to the realization that there is a large field for surgical intervention in benignant affections of the stomach. Czerny has reported 77 cases where he operated for benign tumors. It must be remembered that there is considerable danger of ulcer of the stomach leading to the development of cancer. Rosenheim reported 2 cancers out of 50 cases of ulcer of the stomach that had developed during four years of observation. There are now many such cases in literature. Operation for ulcer of the stomach which is giving severe symptoms is really often the best prophylactic for cancer.

Supposed Contraindications.—The mere size of the tumor is never a contraindication. Even extensive adhesions do not contraindicate operative intervention. Where the tumor is adherent to the liver, to the pancreas, or to the transverse colon, portions of these organs may be removed. This increases the danger of the operation, but does not absolutely forbid it. Gastro-enterostomy for the pain of cancer of the stomach is an illusion. The pain is not due alone nor even principally to the pyloric stenosis, but to interference with sensitive nerve-endings in the stomach. This merely palliative treatment has of itself a mortality of nearly thirty per cent. and the results to be gained from it never quite justify the operation. Where the stenosis is very marked and radical operation is out of the question, gastro-enterostomy may be done to relieve the symptoms of obstruction and will give excellent results.

Intestinal Cancer.—Cancers of the duodenum are usually sharply defined in outline and there is no need to cut far away from the edge of the tumor. In the intestine generally the lymphatics

run around the gut, not lengthwise. The progress of the growth, then, is in the shape of a ring, but it does not extend much along the intestine. There is consequently a chance for the permanent cure of cancer of the intestine even in old cases where the symptoms have been noted over years. Cancerous stricture of the intestine may give rise to the symptoms of sudden obstruction. The stricture may be of so small a caliber that a cherry-pit or an apple-seed will close it up completely, and yet there may have been no symptoms before the complete obstruction, except recurrent constipation. This constipation in elderly people, with attacks somewhat simulating obstruction which are relieved by purgatives, is always suspicious. The pain of intestinal cancer may be as severe and have all the symptoms of intestinal colic. The most prominent symptom is complete obstruction of the intestine. A subacute form may have developed several times before the severe form of the affection. The attacks are repeated with shorter and shorter intervals. With a history of this kind, very careful examination should be made in order to discover the presence of a tumor. Where the cancer is in the colon, especially if low down, ribbon-like stools may occur; or the small rounded scybala, called goat-stools, may be found. At times, of course, there will be mucus or pus in the stools, according to the amount of irritation set up by the cancer. Patients do not, as a rule, die of the cancer, but from acute or chronic obstruction. The symptom of bloody stools may be due to so many conditions that it has very little value for diagnostic purposes.

Cure of Intestinal Cancer.—Under present day auspices in surgery the cure of intestinal cancer is by no means rare. Of 18 cases operated on by Czerny 56 per cent. recovered. Even this mortality is higher than it should be. Operations should be done before intestinal obstruction weakens the patient and before the tumors are large. When tumors are small, even although malignant, the shock of removal is very slight. Colostomy and anastomosis must yet have a prominent place as palliative measures for intestinal cancer. Diagnosis cannot be made early enough to make radical removal always possible. Exclusion of a loop of intestine, or the closing of one end with the opening of the other on the skin, may, in suitable cases, prove of the greatest service to the patient.

Inoperable Cancer.—Dr. William B. Coley said in a paper on this subject that the best treatment for cancer is early and complete removal of the malignant growth. There are cases, however, that become inoperable before the surgeon sees them. To operate rashly on such patients is to invite an almost immediate fatal termination which will deter others suffering from cancer and as yet in an operable condition from submitting to operation. There has been undoubtedly a rapid increase of late years in the number of cases of cancer. Despite surgical procedures three-fourths of them eventually become inoperable.

Some therapeutic measures for inoperable cancer, then, would be most welcome. The administration of thyroid gland, with the removal of the ovaries, in carcinoma of the breast, has been tried in a number of cases. In some of them a good deal of improvement took place, so that it was said we would have to look to the ovaries for the cause of cancer. Further investigation of the subject, however, has not confirmed the preliminary good report. Some good is done, but not much. The injection of alcohol into malignant tumors gives little encouragement.

Inoperable Sarcomata.—The mixed toxins of erysipelas and the bacillus prodigiosus are undoubtedly of service in the treatment of inoperable sarcomata. Round-cell sarcomata are not affected as much by them as are spindle-cell sarcomata. Melanotic sarcomata are affected least of all. In children and delicate persons it is well to filter the toxins so as to administer only the chemical products of the bacilli and not the bacilli themselves. Of course, in no case are the living bacilli injected. The cultures from which the toxins are obtained must be virulent. They should be kept virulent by passage through animals from time to time. The mixed toxins undoubtedly increase the liability to septic infection, so that the hypodermic needle by which they are administered should be very carefully sterilized. Usually it is easy to decide within three or four weeks after the beginning of the injections whether or not it is worth while to go on with them. There are two ways in which the tumors disappear; the first is by sloughing, when the tumors are large, succulent, and mostly composed of cells. Fibrous tumors disappear by resolution and absorption. The toxins may be given for long periods without any harm resulting. They have been given at intervals for two and a half years without causing any serious inconvenience. A spindle-cell sarcoma recurred eight times during four years and each time disappeared under treatment. The patient was a physician and now, six years after the last injection, is perfectly well. So many cases have been treated successfully that now there does not remain the slightest reason for thinking that the tumors were of some other nature than sarcomatous and disappeared in the ordinary course of events. The diagnosis sarcoma has been confirmed by the most typical clinical signs in all cases and in many by microscopic examination of excised sections. Dr. Coley himself has treated 140 cases. Of these 84 were round-cell sarcoma; 3 were completely cured and 40 were improved for some time; 21 were spindle-cell sarcomata, of which 10 disappeared completely, and all were markedly improved by the treatment; 9 melanotic sarcomata were not much affected. Altogether there have been 50 complete successes at the hands of all observers. Risk from the injection of the mixed toxins is practically non-existent. Of 230 cases reported there have been 2 deaths. The treatment is used only for absolute hopeless cases of sarcoma

and the statistics of cure are more than 10 per cent. The mixed toxins should be used in small doses after operation for the radical removal of sarcoma, in order to prevent recurrences. Surely if the injections can cause the resolution and absorption or the suppressive disappearance of large sarcomatous tumors, they can prevent the growth of the small portions of sarcomatous tissue which may be left behind after operation and so save the patient from the dangers of recurrence.

THE HARVARD MEDICAL SOCIETY.

Stated Meeting. Held, Saturday, February 24, 1900.

The President, JOHN B. WALKER, M.D., in the p. 466.)

Treatment of Whooping-Cough.—Dr. Henry Coggeshall read a paper on this subject. (See p. —.)

Complications.—In the discussion Dr. Daniels said that bromoform seems to give the best results for the treatment of the disease itself. Insufflations of various powders have proved to be of no benefit. The dangers to be feared in whooping-cough come from the complications and treatment should be directed to preventing their occurrence. Good hygiene and plenty of fresh air seemed to be the best remedies for this purpose. The ventilation of the sick-room should be very carefully seen to and the nutrition of the children kept at its acme. It is said by good authorities that whooping-cough is not contagious after it has lasted for six weeks. It is well known, however, that the paroxysms continue after this time. These attacks at the end of the disease are evidently not due to a germ. It is probable, then, that much of the so-called antiseptic treatment of whooping-cough is a mistake, since at a time when there are no germs present the whoops may continue.

Dr. Dillon Brown said that the treatment of whooping-cough is not very satisfactory. The best remedy seems to be belladonna. The amount of this to be given, in the words of an old practitioner, should be "enough." Morphine or codeine should be used to limit the number of paroxysms and their severity. During the intense strain of the paroxysms there is danger of the development of cardiac dilatation. To save the heart as much as possible, then, the patient should be kept in bed during the height of the disease.

Contagiousness of Whooping-Cough.—Whooping-cough is one of the most contagious of children's diseases. The patients should be kept thoroughly isolated. The practice of treating these cases in dispensaries undoubtedly leads to the spread of the disease. As many die from whooping-cough as from scarlet fever or diphtheria. Of course, it is not the whooping-cough itself, but one of its complications, meningitis or

pneumonia, that closes the scene. In very young children the disease is extremely fatal. Dr. Brown has seen three cases in children under a month old, all of whom died. During a paroxysm the children became black in the face and died from asphyxia.

Dr. Brandon said that children suffering from whooping-cough should occupy a large, sunny room, into which plenty of air can be admitted without producing a draft. Another room should be provided into which the patients can be transferred when desired. The children should be kept a half a day in each room, the vacant one being thoroughly ventilated in the meantime. Internally, belladonna, to its physiological effect, with a certain amount of antipyrine and the bromides, to lessen the number of paroxysms, seems the best medicinal treatment. A one-per-cent. spray of resorcin in the nose and throat has been reported to be of service. The inhalation of steam from a steam atomizer is of great value. The vapor of cresoline or of creosote may be added with advantage. A tent can be made by stretching a blanket over an umbrella and beneath this the child, with its mother, may breathe the vapor. The paroxysms are much less under this treatment. It must be borne in mind that the nutrition of the child is of great importance. It should be fed very carefully, then, and if after feeding a paroxysm of cough causes vomiting the child should be fed again.

European Clinical Hints.—Dr. Potter said that Henoch seemed to have confidence in only one drug in whooping-cough and that was morphine. Heubner, his successor as professor of children's diseases at Berlin, recommends atropine. Monti at Vienna advises atropine and morphine. Monti also suggests the use of two rooms. In one of them he burns a certain amount of sulphur and then has the child exposed to the vapor for some hours. He claims excellent results from this method. There are some who consider whooping-cough as a neurosis while others think it an infection. It is very probable that certain neurotic elements always enter into the symptoms and that good can be done by treating any condition from which nervous reflexes may originate. With reference to the etiology of the bronchial pneumonia which so frequently develops during the disease, Monti attributes it to the aspiration of food-particles during the vehement paroxysmal inspirations. This indicates the necessity for keeping the mouth and throat as clean as possible.

In closing the discussion Dr. Coggeshall said that he had used resorcin spray without effect. The fumigation of the sleeping-room by means of sulphur he considers an excellent adjuvant to any treatment that may be instituted. Whooping-cough is not a neurosis nor an infection, but a neurosis and an infection, and both conditions should be treated. Cocaine is well tolerated by children and the use of it in four-per-cent. solution as a spray can only be a source of danger when used very negligently.

Alopecia in Hodgkin's Disease.—Dr. Potter reported a case of typical Hodgkin's disease in which the notable feature was complete alopecia. Not only the hair of the head but also the pubic and axillary hair disappeared. The symptom is extremely rare in Hodgkin's disease. There seems to be no mention of it in literature. Death took place from cardiac failure. The heart failure had been preceded by symptoms of enlarged glands pressing on the trachea and nerves of the neck.

Dr. Walker reported a case of Hodgkin's disease in which death had also taken place from the pressure of enlarged glands on important structures in the cervical region.

Dr. Brewer detailed a case in which jaundice, lasting for months and very intense in type, had been preceded by acute pain in the hepatic region. The diagnosis of cholelithiasis was made. An operation was done for its relief, but the gall-bladder was not incised, as no calculi could be felt within it. Some enlarged glands were found in the omentum. One of these was pressing upon the common biliary duct. It was removed, although without any feeling of assurance that it would relieve the symptoms. The jaundice cleared up at once, however, after the operation and has not recurred.

Dr. Lilienthal reported a case of enlarged cervical glands removed by operation. Recurrence took place and some of the enlarged glands were situated within the thorax, so that radical removal seemed impossible. The patient developed a hydrothorax on the right side which, on being tapped, proved to be due to an accumulation of chylous fluid. For two months before death this chylous fluid continued to collect. It was removed every few days. After each withdrawal the chest filled up rapidly. Complete aspiration of the fluid was always followed by relief, but the operation had to be repeated at least twice a week. Finally chylous ascites developed, which also had to be tapped. After this came the fatal termination of the disease.

Dr. Fuller detailed a case of syphilitic liver which had been diagnosed as cancer. The patient suffered from bloody stools and marked ascites developed. The liver was rough, nodular, hard and very much enlarged. The enlargement melted away, however, under the free use of the iodides. One puzzling symptom in the case for which there seemed no thoroughly satisfactory explanation was the occasional occurrence of gushes of blood from the mouth. These cases are often mistaken for cancer, and Dr. Janeway has pointed out that a hopeless prognosis is often given to patients in whom a course of syphilitic treatment at once begins to have its effect and the case improves very satisfactorily.

Dr. Walker detailed the case of a woman of forty, who for eighteen months had suffered from painful flatulence and loss of appetite and had lost a good deal in weight. She had gone abroad with the idea that a change might do her good. In London she was told that she was suf-

fering from pulmonary tuberculosis. In France the diagnosis had been intestinal catarrh. She lost twenty-six pounds in three months and returned to this country very much discouraged. One surgeon in New York had pronounced her case to be probable cancer of the liver. Another diagnosed some pathological condition of the gall-ducts. Jaundice was not marked and there was no history of attacks of pain such as would occur with gall-stones. An exploratory incision showed the presence of gall-stones in her gall-bladder. Altogether 583 calculi were removed. She began to improve immediately after the operation, has gained in weight ever since and continues to feel in the best of health.

Dr. Brewer said that a great many cases of gall-stones occur in which pain and jaundice and the ordinary symptoms of the presence of biliary calculi are absent. Kehr declares that 80 per cent. of gall-stones fail to produce jaundice. More than half of them never produce any characteristic symptoms.

REVIEWS.

A Practical Treatise on Diseases of the Skin.

By JAMES NEVINS HYDE, A.M., M.D., and FRANK H. MONTGOMERY, M.D. Fifth and revised edition. Illustrated. Lea Brothers & Co., Philadelphia and New York: 1900.

In reviewing a volume of this character, the difficulty at once presents itself of deciding whether it shall be treated from the standpoint of the specialist or of the general practitioner, and the authors must have been confronted with the same problem in writing it. In striving to harmonize the two points of view, they have perhaps laid their work open to a good deal of criticism from either direction and yet, to one who realizes the magnitude of the task, they seem to have achieved their purpose unusually well. In previous editions the book has enjoyed a wide popularity owing to the reputation of the senior author, and, if actual value is to be the measure of success, the present edition will have a still more extensive circulation. The book has been thoroughly revised and carried up to date by the addition of matter upon such recent discoveries as blastomycetic dermatitis and by the rewriting of most of the other chapters, which contain references to medical literature as late as December, 1899.

Speaking generally the volume is very complete: While the space devoted to Etiology and Pathology is not as extensive as we could wish, it is yet ample for the general practitioner; the Symptomology is in most cases remarkably complete, and if the clinical picture of disease is not as sharply drawn as in some other works it is because of the attention paid to atypical cases. But, when all is said, the parts of such a book that are of especial value to the physician at large are the ones devoted to Differential Diagnosis and Therapeutics, both of which have been treated with great care and skill. The one criticism that

we have to offer of the latter is that the authors, in their effort to be absolutely fair in the discussion of disputed points, have not given us the benefit of their own individual experiences and preferences. While almost everything that has really proved valuable in Therapeutics is given, yet not enough distinction is made between methods that have been universally serviceable and others which are never referred to except in text-books. An admirable spirit of conservatism is manifest throughout which cannot fail to inspire confidence, and we are pleased to note the amount of credit given to American dermatologists for original work. The illustrations are numerous and helpful, which latter is more than can be said of most works of this kind.

Practical Text-Book of Midwifery. For nurses and Students. By ROBERT JARDINE, M.D., Edin., M.R.C.S., Eng.; F.F.P. and S., Glasgow; Physician to the Glasgow Maternity Hospital. New York: The Macmillan Company. Edinburgh: William F. Clay. 1899.

BASED upon the lectures given to the nurses in the Glasgow Maternity Hospital, the work is admirably adapted to the purpose for which it is primarily intended, the teaching of nurses in training schools. The author has succeeded in presenting scientific truth in a manner at once interesting and easily understood by the merest beginner in midwifery. There are many excellent features of the work, not the last of which is the chapter on "Antisepsis and Asepsis." Careful consideration is given to this most valuable part of the nurse's training. We are not in accord with the author in the use of turpentine and carbolic acid, as we believe that other antiseptics, such as lysol and bichloride of mercury, are much to be preferred. The more difficult subjects of "Presentation," "Position," "Labor and Its Management," are presented simply and very clearly. In the chapter on "Care of the Mother and Child," we should advise that, before the use of the catheter, the patient be allowed to sit in a partially upright position, as recommended by Hirst, a procedure which is often attended with satisfactory results. The second week, in our opinion, is still too early, in the vast majority of cases, to allow the patient to be upon her feet, unless circumstances compel her to do so. We regret that the author advises the use of Schultze's method of artificial respiration in the treatment of asphyxia in the new-born. It is rough, dangerous (as he himself admits), dirty, and in no way superior to other easier, safer and at least equally effective methods, such as the Byrd-Dew and Sylvester. The treatment of post-partum hemorrhage is clear and concise, and in the choice of a few excellent measures the nurse will be saved from the confusion often attending upon a perusal of some of our text-books. Taken as a whole, we cannot speak too highly of the practical value of this work, and can cordially commend its use in the instruction especially of nurses in our training schools.